



***Waterslide Dispatch System
User Manual***



WELCOME...

...and thank you for purchasing the Launch Logic *Slide Monitoring System*. The following pages will assist you in the initial setup and continued operation of the system.



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1 THEORY OF OPERATION

The Launch Logic system is designed to assist an operator in metering a slide's launch cycle by monitoring the status of the slide, and by using a visual signal to prompt the operator. Accu-Logic™ Beams are installed at the slide's entry and exit for this purpose (to determine when a guest enters and/or exits the slide). Based on predefined rules, the system implements timers and logic to indicate when a slide is occupied.

The system also indicates to the operator when a malfunction has occurred, either in the monitoring hardware or in the expected passage of a guest through the slide. The system is configurable to run in either a manual-reset mode (where a reset button must be pressed to clear a fault), or in an automatic-reset mode (the slide resets after a predetermined length of time). Multi-slide systems are able to be configured independently of one another.



2. DESCRIPTION OF HARDWARE

The Launch Logic system includes a Main Control Panel, Accu-Logic™ Beam Junction Boxes, Launch Lights, and Pause Buttons. A single Main Control Panel is capable of servicing up to two separate slides, identified as S1 and S2

Each Launch Logic system includes:

- (1) Main Control Panel

Each Slide in the system includes:

- (2) Accu-Logic™ Beam Junction Boxes (one mounted at the top of the slide, the other mounted at the bottom, each with an emitter-receiver pair)
- (1) Launch Light with integrated Reset Button (connected to the Upper Junction Box)
- (1) Pause Button (connected to the Lower Junction Box)

2.1 Main Control Panel

The system is controlled by a SmartRelay, which has an onscreen display feature that is visible when the control panel door is opened. This screen continually displays the system software version and daily ride count, is capable of displaying the length of time the most recent rider spent in each slide, and is used to set parameters and operating modes for each slide.

2.2 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 the main control panel indicating that a guest has passed.

2.2.1 Accu-Logic™ Beam Descriptions

SENSOR NAME	SENSOR LOCATION	SENSOR DESCRIPTION
LB1	Entrance of Slide	Detects a guest entering the slide.
LB2	End of Slide	Detects a guest leaving the slide.



2.3 Launch Light

The Launch Light is controlled by the SmartRelay. It features red and green lamps that indicate the slide's status, and is also where the slide Reset Button is located.

Green Light – The Green Light is visible when the slide is unoccupied and it is OK to dispatch a guest.

Red Light – The Red Light is visible and constantly illuminated when the Pause Button is depressed, or when a rider has entered the slide. The Red Light will flash if a rider has not exited the slide within the predetermined maximum ride time. This initiates a MAX TIME fault; If auto-reset is not enabled, the system will not resume until the operator presses the Reset Button.



3. DETAILS OF OPERATION

3.1 Overview

When the Launch Light is green the system is indicating to the operator that the slide is unoccupied. Once a guest enters the slide (LB1 is blocked), the Launch Light will turn yellow while LB1 is blocked and then it will turn red indicating to the operator that the slide is occupied.

After a guest enters the slide the Launch Light will remain red until the guest exits the slide (LB2 is blocked, light flashes yellow briefly) and a clear time has passed (CLR timer).

There is one operational fault that can occur while the slide is occupied.

- 1) The guest stays in the slide for too long (MAX timer)

For a detailed descriptions and procedure for setting timers see section 3.3.

At any time, an operator may press the PAUSE button at the end of a slide, which overrides the system logic and forces the Launch Light to RED. This may be done if a guest is having difficulty exiting the slide, or if another problem occurs that would prevent the next guest from safely entering the slide. The RESET button has no effect while the PAUSE button is engaged, and the Launch Light will remain red until the operator pulls the PAUSE button back out and the slide is clear. If the Auto-Reset function for a slide has not been enabled, a manual reset will be required if a MAX TIME fault occurs while the system is paused.



3.2 Sensor Locations

Logic beam locations are critical to proper system operation. By following the guidelines spelled out below, you will ensure a proper system operation. See the accompanying installation guidelines for more detailed instructions.

LB1 Placement

LB1 should be at the start of the slide and in a position so that it's not inadvertently blocked by a guest standing at the entrance. For proper operation LB1 should be placed far enough into the slide so that once it is blocked by a guest passing in front of it, the guest does not have the ability to stop and exit back out of the slide. This should be within 3-6 feet of the start of the slide. The mounting position should be as low in the cross section of the slide tube as possible.

LB2 Placement

LB2 should be placed near the end of the slide at a point where it won't be unintentionally blocked. This position should also be as low in the cross section of the slide tube as possible. The CLR TIME allows for this sensor to be located further upstream in the slide and still allow the guest enough time to clear the slide before the Launch Light turns green.

The CLR TIME is the amount of time AFTER the guest blocks LB2 when the system considers the slide clear and turns the light green. This option can be utilized to allow for an easier placement of LB2 as described above or it can be used on slides that may have a slower exit time once the guest has entered the pool or shutdown lane, thus giving the operator at the bottom additional time to help guests out of the exit path of the slide.



3.3 System Timers

The Launch Logic SmartRelay uses various timers for normal operation and to detect fault conditions. Some of these timers must be adjusted before the system will operate properly. For details on adjusting the timers see section 5 System Configuration.

Operational Timers (NOTE: The timers for a single slide (S1) are described below. Corresponding timers for Slide 2 are named ‘S2MIN’, ‘S2MAX’, etc., for up to three slides)

TIMER NAME	TIMER FUNCTIONS
S1MIN	<p>This is the minimum time the slide can be occupied before the system will accept a signal from LB2 indicating the slide is clear. This prevents the scenario where a person has just entered the slide and someone at the bottom blocks LB2. In this scenario the system would reset the Launch Light and indicate an unoccupied slide, however with the MINTIME set properly, the system will not accept a signal from LB2 until the timer has expired.</p> <p>This timer should be set to the time it takes from a guest blocking LB1 till they are at least half way down the slide, but no more than the shortest time it takes for a guest to travel between the two Accu-Logic™ Beams. If this timer is set too long the system will miss the rider as they pass LB2 and cause a system fault after MAXTIME expires. The default setting is 5 seconds.</p>
S1MAX	<p>This is the maximum time a guest can occupy the slide before Fault 1 occurs. MAXTIME is designed to detect a rider who has become stuck in the ride, this timer starts timing when LB1 is blocked and is reset if LB2 is blocked before the timer has expired.</p> <p>This timer should be set by taking the longest time it takes under normal conditions, for a guest to pass between the Accu-Logic™ Beams, and then add 10-15 seconds. The default setting is 50 seconds.</p>
S1CLR	<p>This is the time delay after the guest clears LB2 before the Green Launch Light comes on. This provides the guest some time to clear the slide exit area before the system indicates an unoccupied slide. The CLRTIME timer starts timing when LB2 has been blocked, and when it expires the Launch Light turns green.</p> <p>This timer should be set to the amount of time it takes for the exit of the slide to be clear, after the guest has blocked LB2. The default setting is 5 seconds.</p>
S1TF, S1BF	<p>These are all system parameters and should not be modified without first contacting Launch Logic.</p>



4 SYSTEM FAULTS

4.1 Fault Conditions

4.1.1 Fault

Fault occurs when a guest is in the slide too long. This is based on the MAX timer. When a MAX Fault occurs the Launch Light will remain red, but flash off in 2.5 second intervals.

IN MANUAL-RESET MODE:

To Reset the Fault, the slide should first be checked for a stuck guest. Once the guest is clear, the reset button will clear the fault as long as both Accu-Logic™ Beams are aligned and unblocked.

IN AUTO-RESET MODE:

The fault will clear itself after approximately 15 seconds.



5 SYSTEM CONFIGURATION

5.1 Timer Calibration

To maximize the performance of the system, MIN and MAX timers for each slide should be customized based on the average time it takes for a rider to pass through the slide. To aid in this process, the SmartRelay keeps a record of the duration of the most recent ride for each slide.

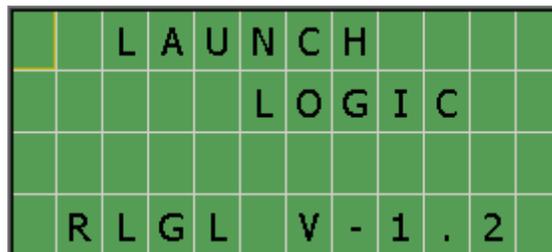
To view most recent ride information, first ensure that the SmartRelay is in Run Mode and the Message Screen displays the Launch Logic RLGL Title page.

If the SmartRelay is not in Run Mode, the display will show a menu with selections “Program.., Card.., Setup.., Start”:



Use the down arrow key ▼ to point the cursor to ‘Start’, then press the ok button . Run Mode is now active.

If the System is in Run Mode but the Title page is not displayed, press the up arrow key ▲ repeatedly until the title page appears:





Press and hold the esc button , then press and hold the up arrow key  to view Slide #1, the right arrow key  to view Slide #2, or the down arrow key  to view Slide #3:

S	L	I	D	E	1				
S	L	I	D	E	T	I	M	E	
				1	3	S	E	C	.

5.2 Auto-Reset Mode

To enable a slide's Auto-Reset mode, follow the steps above to view its ride time, and continue to hold the arrow key for 15 seconds. A confirmation screen will appear:

	S	L	I	D	E	1				
	A	U	T	O	-	R	E	S	E	T
				O	N					

To disable a slide's Auto-Reset mode, follow the steps above, but continue to hold the arrow key for 20 seconds. A confirmation screen will appear:

	S	L	I	D	E	1				
	A	U	T	O	-	R	E	S	E	T
				O	F	F				



5.3 SmartRelay Timers

The following is the procedure for adjusting the smart relay timers:

If the SmartRelay is not in Run Mode, follow the instructions above to set Run Mode.

Once the Title page appears, press the down arrow key ▼ repeatedly to scroll through all active messages until the date and time appear.

1. With the display showing the date and time, press the esc button  once; the display will show a menu with selections “Stop, Set Param, Set..., Prg Name”:



Use the down arrow key ▼ to point to ‘Set Param’ and press the ok button .

2. The next screen will be a list of timers that you can scroll thru:



A timer will have the parameters ‘T’ and ‘Ta’. Using the up and down arrow keys ▲ ▼, the screen will cycle through all the blocks in memory.



Once the desired timer is on the screen, press the ok button  to edit the block's parameters. A flashing cursor will appear on the first parameter:



3. Use the left and right arrow keys   to move the cursor position, and the up and down arrow keys   to modify the value of the field highlighted (this will increment and decrement numbers and also increment and decrement the scale factor on units, such as on a timer with a T variable of 5:00s. With the cursor over the 's' (seconds), pressing the up arrow will change the unit to 'm' (minutes) and then to 'h' (hours)). Once adjustments have been made, press the ok button  to save changes. Once again the up and down arrows will scroll through the list of parameters in memory.
4. When all changes are complete, press the esc button  until the display shows the date and time. The program is now running with updated parameters.