



Flash Track Lighting

The Chase Light Controller Experts

Located near St. Louis at 19027 Old Manchester Road, Pacific MO 63069

Phone: (636) 391-1161

Fax: (636) 273-9868

www.FlashTrackLighting.com

Nick@FlashTrackLighting.com

3 Track Smart Chaser Product Manual (3TSC-10)

Table of Contents

Part 1: General Info about This Product

1. About the 3 Track Smart Chaser and our Services (p2)

- a. About the 3 Track Smart Chaser
- b. Standard Features Included with the 3 Track Smart Chaser
- c. Services Automatically Included with all Purchases from Flash Track Lighting

2. Chase Light Controller Basics (p3)

- a. What is a chase light controller?
- b. Terms and Definitions: Patterns, Sequences, Settings, Modes, and Tracks
- c. What makes this chase light controller a “smart chaser”?

3. Help Choosing the Right Controller for Your Display (p4)

- a. What the 3 Track Smart Chaser Can Do
- b. What the 3 Track Smart Chaser Cannot Do
- c. Call or Email Flash Track Lighting for Help

4. Descriptions of the Sequence Patterns Already Pre-Programmed on the 3 Track Smart Chaser (p 5-6)

- a. A Copy of the Sequence Label that shows each available pattern and the # of tracks it is available in
- b. A Written Description of the effect that each available pattern creates
- c. See www.FlashTrackLighting.com for animated examples of each pattern

Part 2: Directions for Using This Product

5. Parts of the 3 Track Smart Chaser (p7)

- a. Front View (Speed Pot, Hanging Brackets, 3-Prong Plug, 3 Receptacles)
- b. Inside View (Dip Switch to Select Pattern, Fuse)
- c. Sequence Tag (A copy of the Tag and Explanation of How to Use It)

6. Setting Up and Using Your Smart Chaser (p 8-10)

- a. Testing Your Lights FIRST (p8)
- b. How to Set Your Chase Pattern (p9)
- c. Plugging Your Lights In (p10)
- d. How to Adjust Your Chase Pattern’s Speed (p10)
- e. Mounting Your Controller (p10)

7. About Amperage and Troubleshooting (p 11-13)

- a. What a Maximum Load of 10 amps ON AT ONE TIME means (p11)
- b. How to Calculate Your Amperage (p 11-12)
- c. Troubleshooting (p 12-13)

8. Product Warnings and Safety Precautions (p14)

About the 3 Track Smart Chaser

Flash Track Lighting's 3-Track Smart Chaser is the perfect choice for creating spectacular lighting effects both indoors and outdoors, no matter the application. Use this chase light controller and any of its 16 pre-programmed chase sequences to create stunning Christmas Light Displays, Chase Light Signs, Casino Displays, and animated light shows that use 2 or 3 tracks, and require no more than 10 amps on at one time. This powerful chase light controller is built for commercial use – entire holiday light parks run their displays using Flash Track Lighting's Smart Chasers!

Standard Features of the 3-Track Smart Chaser Include:

- 3-Track Smart Chaser with 16 different sequences to choose from
 - This includes 5 sequences for 2 track mode and 11 sequences for 3 track mode, all ready to Plug and Play.
(See pgs. 5-6 for a detailed description of all the chase sequences included with this controller.)
 - Easily select your chase sequence with the built-in dip switch – no programming or messing with wires! Simply look at the label on the top of the controller, and then flip the dip switch sliders to your desired setting. (See pg 9 for directions on how to set your chase pattern.)
- Maximum amperage: 10 amps on at one time
 - 10 amps is the maximum load that can be on AT ONE TIME, not per receptacle.
(See pgs 11-12 for more info on this and for help estimating your display's amperage.)
- Variable Speed Control with a Speed Pot on the Outside of the Box that lets you Dial in the Perfect Speed
 - Standard speed range is from 1/20th of a second to 2 seconds per step, while speed range for "slow" patterns is 2 to 6 seconds per step. (See pg 10 for more info on how to change the speed.)
- Durable, Commercial-grade Controllers are Built to Last and Made in the USA
 - Outdoor, weather-resistant, Aluminum Controller Boxes will withstand the harshest environments and are built in the USA with UL Listed Parts, Fuse Protection, and Solid State Circuitry.
- 1 Year Limited Warranty that includes American-based expert technical support, directly from Flash Track Lighting
 - Flash Track Lighting is an independently owned American manufacturer – we design our own controllers, we have them built 100% in the USA, and we handle customer service ourselves. (Just call or email us if you have any questions – you can reach us by email at Nick@FlashTrackLighting.com or by phone, toll free, at 1-877-391-1161.

Services Automatically Included with Your Purchase

When you buy a smart chaser from Flash Track Lighting, our free expert support is automatically included! We ARE the chase light controller experts – we design and manufacture our own products, and we pride ourselves on both the quality of our products and our one-of-a-kind, expert customer service.

If you contact us for assistance, we can help you select the right controller for your display, talk you through exactly how to wire your display's lights into your new controller for your desired chase effect, calculate amperage if needed, set the chase sequence you wish to use, and troubleshoot any issues that arise, all for NO ADDITIONAL CHARGE! Contact us at Nick@FlashTrackLighting.com or at 1-877-391-1161 for assistance.

The Basics of the 3 Track Smart Chaser

What is a chase light controller and how does it work?

- Chase light controllers like this one run animated light displays by turning the power on or off to certain strands of lights at certain pre-programmed intervals, to simulate a specific motion. By having certain strands (aka “tracks”) of lights turn on and off at different intervals, it will look like a wheel is turning, a hand is waving, a word is being spelled out, etc..

Terms and Definitions: What are patterns, sequences, settings, modes, and tracks?

- a. The specific order and timing in which tracks turn on and off is called the chase “pattern”. We use the word “pattern” to refer to the specific motion or visual effect created, and the word “sequence” to mean a specific pattern, set to use a specific number of tracks.
 - i. For example, the “chase” *pattern* sequentially turns each track on, 1 track at a time, to create a visual effect that looks like the lights are “chasing” each other. That particular *pattern* can be set to run as a *sequence* in 2 or 3 track modes on the 3 Track Smart Chaser.
 - ii. The 3 track smart chaser includes 11 different patterns that can be used in 16 different sequences. (“Chase Slow” is 1 of the 11 available patterns. Since it can be run in 2 or 3 track modes, the Chase Slow pattern is available in 2 different sequences.)
- b. When we use the word “setting”, we are talking about the specific combination of 1s and 0s found on the 3 Track Smart Chaser’s “Sequence Label”, that is used to set the dip switch sliders to your desired sequence.
 - i. For example, to set your controller to run a 2 track chase sequence, the *setting or code setting* is “1000”. (See pg 9 of this manual for more information on this.)
- c. Each track corresponds to one of the smart chaser’s receptacles. One “track” refers to all of the lights powered by that one receptacle. (Receptacle 1 is track 1, etc.).
 - i. When setting up your controller, know that each receptacle is one track. Thus, our 3 track smart chaser has 3 receptacles and can run sequences that use up to 3 tracks.
 - ii. When referring to a specific sequence (a given pattern, set to use a specific number of tracks), we will sometimes use the word “mode” to mean tracks. For example, we might say that a certain setting is for “a Build Up pattern in 3 track mode”.
 - iii. Other brands of chase light controllers may also refer to “tracks” as channels or circuits.

Why are our controllers called “Smart Chasers” instead of just chase light controllers?

Our chase light controllers are “smart chasers” because of their logical, naturally intuitive, easy to use design that includes many pre-programmed chase sequences.

- 1) Our 3-Track Smart Chaser includes 16 pre-programmed sequences, consisting of 11 pre-programmed patterns, with 5 of those patterns available in 2 track mode, and all 11 patterns available in 3 track mode.
- 2) Our smart chasers were designed intuitively, for your ease of use. To change sequences on our controllers, all you have to do is flip the sliders on the dip switch up or down. No pliers needed and no having to mess with confusing wires!

Is This the Right Controller for My Display?

When choosing a controller, keep in mind that this 3 Track Smart Chaser can run 2 or 3 track displays, in the sequences listed on the sequence label, with a maximum of 10 amps on at one time.

- If you need more than 3 tracks, more than 10 amps, or a different pattern, review the specs for our 4, 6, and 8 Track Smart Chasers.
- If you need more than 18 amps or a custom sequence, check out our programmable controllers.

What This Smart Chaser Can Do:

- There are 16 different chase sequences built into this smart chaser, all ready to plug and play. They are based on 11 different patterns – all 11 patterns can be run in 3 track mode, and 5 of the patterns can also be run in 2 track mode.
 - Look at the Sequence Label and the detailed descriptions of what each available pattern does on pgs. 5-6 to see if the sequence you need is available with this controller.
- You CAN adjust the speed of your sequence pattern with this smart chaser by turning the speed pot left or right, to dial in the perfect speed. (The speed pot is located on the bottom, right end of the controller, centered between the two receptacles.)
 - For most of the available sequences, the speed pot will let you adjust the speed from as fast as 1/20th of a second per step to as slow as 2 seconds per step.
 - For sequences labeled “slow”, the speed pot will let you adjust the speed from as fast as 2 seconds per step to as slow as 6 seconds per step.
 - *Note: A “step” is defined as each stage of the changes of the lights, as they move through a pattern. When any light turns on or turns off in one moment, that is a “step”. When another light turns on or off after that, that is the next “step”.*
- All of Flash Track Lighting’s controllers, INCLUDING this one, CAN be used outdoors.

What This Smart Chaser CANNOT Do:

- This smart chaser is limited to 3 separate tracks of lights and can only run up to 10 amps ON AT ONE TIME. (Look at our 4, 6, and 8 Track Smart Chasers if you need more tracks or more amps.)
- This smart chaser cannot be custom-programmed to run any sequences that are not already built in.
 - Talk to us if you think your display requires a custom sequence. There is a good chance that one of the 16 sequences pre-programmed on this smart chaser will meet your needs, but if not, we can look at whether or not one of our other products (4, 6, and 8 track Smart Chasers OR custom Programmable Controllers), would be the right fit for your display.
- This smart chaser does not work with music input.
 - We have seen many amazing holiday light park displays and home displays run on this controller with music playing along, but Flash Track Lighting’s controllers are not capable of responding to music input or being custom-programmed to move “in step” with music.

If you are having trouble deciding if this is the right product for you, call us at 1-877--391-1161 or email us at Nick@FlashTrackLighting.com to let us help make sure you are choosing the right controller for your display.

We are available to talk through your display with you to help make sure that you are choosing the right controller for your needs. (We can also tell you which strands of lights to plug into which receptacles and which sequence to choose to get the effect you want for your display for no additional charge!) Our expert assistance comes free with your interest in our products!

Descriptions of the Sequence Patterns Already Pre-Programmed on the 3 Track Smart Chaser

The 3-Track Smart Chaser comes with 16 different sequences to choose from, including 5 sequences for 2 track mode and 11 sequences for 3 track mode.

The label below shows which sequences are included with the 3-Track Smart Chaser.

Here are descriptions of each of the included base patterns.

Visit our website at www.FlashTrackLighting.com and click on Products and Pricing, "See Our Pre-Programmed Chase Patterns" to see animated examples of what each of these patterns can do.

3-Track Smart Chaser Pattern Descriptions:

- Chase: Sequentially turns on each track, one at a time
- Wave: Turns lights on and off in a back and forth motion, like an ocean wave
- Slow Chase: A slow chase pattern, with a speed range of 2-6 seconds per step
- Slow Wave: A slow wave pattern, with a speed range of 2-6 seconds per step
- Chase with Delay: Chase pattern with a 3 times longer delay on step 1
- Wave with Delays: A wave pattern with 3 times longer delays on step 1 and step 3
- Chase with Blank: A chase pattern that adds a "blank" delay (a delay with all lights off) at the end of step 3, after which the pattern then repeats
- Negative Chase: Reverse of the chase pattern – sequentially turns 1 track off at a time, while keeping all other tracks on
- Build-Up: Sequentially turns each track on, keeping it on until all tracks are on, then turns all tracks off together
- Speller: Build up that ends with all tracks flashing on and off together 3 times
- Multi-Sequence: A 20 second loop with 8 different, 1 to 3-second-long chase patterns.
(See next page for a detailed explanation of what multi-sequence does and how you can use it.)

Use dip switch on circuit board to select chase seq. Move slides to match setting. 1=On/Up 0=Off/Dn Un-plug the controller box before changing setting.

<u>Sequence Label</u>				<u>Max.</u>
<u>Seq Code</u>	<u>Abbrev.</u>	<u>Description</u>	<u>Amps per Receptacle</u>	
1	1000 2TC	2Track Chase	10	
2	0000 3TC	3Track Chase	10	
3	1100 3TW	3Track Wave	10	
4	0001 2TCS	2T Chase Slow	10	
5	0010 3TCS	3T Chase Slow	10	
6	0011 3TWS	3T Wave Slow	10	
7	0100 2TCD	2T Chase w/Delay	10	
8	0101 3TCD	3T Chase w/Delay	10	
9	0110 3TWD	3T Wave w/Delays	10	
10	0111 3TCB	3T Chase w/Blank	10	
11	1001 3TNC	3T Negative Chase	5	
12	1010 2TBU	2Track Build Up	5	
13	1011 3TBU	3Track Build Up	3	
14	1101 3TS	3Track Speller	3	
15	1110 2TM	2T Multi-Sequence	5	
16	1111 3TM	3T Multi-Sequence	3	

A 10 Amp 32 V ¼ by 1 ¼ fuse is located on the circuit board.

Description of the Multi-Sequence Pattern

The multi-sequence pattern is available in 2 and 3 track modes on the 3 Track Smart Chaser. The pattern consists of a 20 second loop with 8 different, 1 to 3-second-long chase patterns.

What Multi-Sequence Does:

Multi-Sequence goes through all of the following patterns, in this order, in a total of about 20 seconds (approx. 1-3 seconds per pattern), on a continuous repeating loop.

- 1) Performs a basic chase, with all tracks chasing to the right, 6 times, at a fast speed
 - 2) Performs a chase, with all tracks chasing in the opposite direction to the left, 6 times, at a fast speed
 - 3) Alternating tracks flash on and off together, at a very fast speed, 32 times
 - a. This means that all of the even tracks will flash on together once, then all of the odd tracks will flash on together once, and this will repeat until both sets of tracks have each flashed on and off 16 times. This creates a shimmering or glitter-like effect.
 - 4) All of the tracks build up, and then turn off. This repeats 4 times.
 - 5) All of the tracks turn on together, and stay on together for a 3 second hold
 - 6) All of the tracks flash off together, and then on together, 3 times
 - 7) All of the tracks turn on, and stay on together for a 2 second hold
 - 8) All of the tracks chase back and forth, at a fast speed, 6 times
- *At this point, the cycle goes back to step 1 and repeats.*

How You Can Use Multi-Sequence:

Multi-Sequence can be used for MANY different types of displays. Although the best effects are often achieved in 4-track mode (which is not available on the 3 Track Smart Chaser), there are many possibilities for using multi-sequence in 2 and 3 track modes.

The multi-sequence pattern can be used to animate any group of shapes, including bushes, trees, stars, snowflakes, poles, posts, tree trunks, fence sections, parallel strands of lights across a roof, parallel strands of lights on the ground, arched tunnel displays, chase lights, and more.

See our website, www.FlashTrackLighting.com, for animated examples.

Setting Up and Using Your 3 Track Smart Chaser (3TSC-10)

Always test your lights first, BEFORE plugging them into the controller!

Parts of the 3 Track Smart Chaser

Front View



Speed Pot Dial

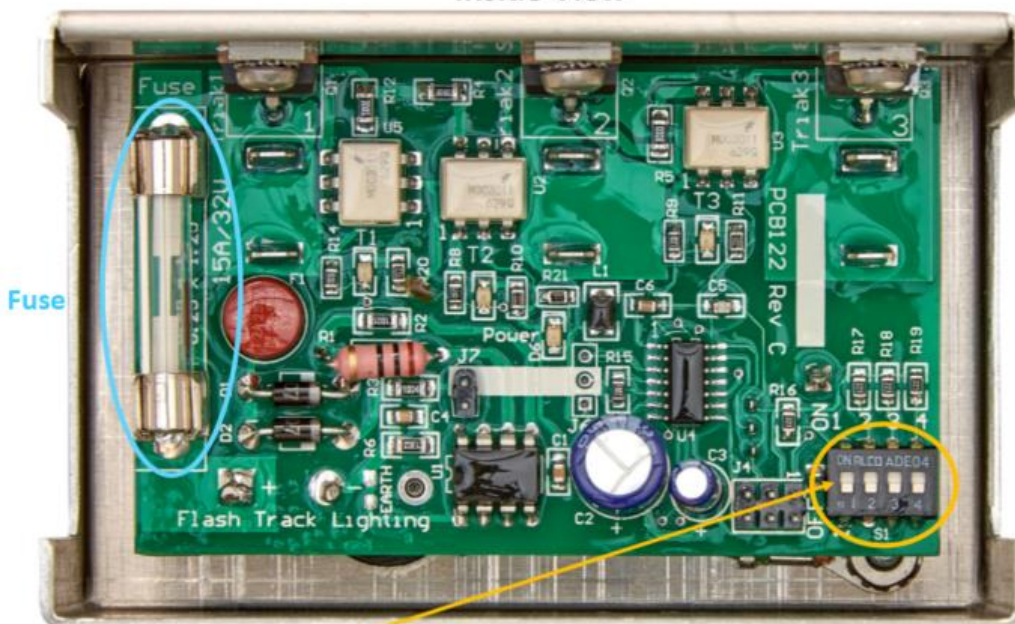
Turn the dial left to slow down your pattern and right to speed it up.



3 Receptacles (2-Prong Receptacles)

3-Prong Plug

Inside View



Dip Switch: Flip the 4 sliders up or down to select your chase sequence.

Sequence Tag

This green Sequence Tag is included with all of our smart chasers and comes zip-tied to the power cord.

You can use this to tag to write down which display this controller goes with, what sequence you used, and which lights you plugged into which receptacles to achieve your desired effect.

Keep in mind that the 3 Track Smart Chaser ONLY has receptacles 1-3.

You can write on this tag with any permanent marker. The back of the tag is blank for additional notes.

Using Your Smart Chaser: Testing the Lights First

Always test your lights for shorts before plugging them into the controller. To do this, plug each set of lights into an outlet or extension cord other than the controller. If any lights cause the breaker to pop or produce significant sparks, make the necessary adjustments, then test the lights again. Once there are no issues or sparks, the lights may be plugged into the controller. This step is necessary to protect the controller. Although the controller is protected by a fuse, it can be damaged by a severe short under the right conditions. Damages caused by shorts within a light bulb or caused by shorts within the wires to the lights (which can happen when wires are smashed between the display's frame and the support poles), are not covered under the controller's warranty.

If, while testing your lights, you are experiencing significant sparking at the plugs OR you are having a difficult time finding the cause of a short, look for the following possible causes:

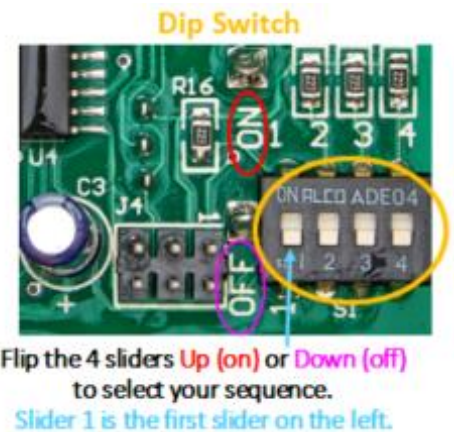
(Note: Having empty light sockets will NOT cause a short.)

- ✓ Are you experiencing a lot of sparking when plugging in the lights OR did a fuse blow?
 - Excessive sparking at the plug that occurs when plugging lights into a power source can be caused by having too many bulbs on the line. When there are too many bulbs on the line, this can also cause the fuse to blow at the controller or at the fuse box. (See pages 11-12 for directions on how to calculate your amperage.)
 - If you have not exceeded your amperage by having too many bulbs on the line, then a short is the most likely cause of the sparking and can be corrected by reviewing the following questions.
- ✓ Are any of the glass bulbs broken?
 - If so, remove all broken bulbs from the sockets and install new bulbs while the lights are NOT plugged in.
- ✓ Have any of the glass bulbs loosened from their bulb bases?
 - Glass bulbs that have loosened from the base are the most common cause of shorts. Bulbs can loosen from the base while they are being removed, while they are being installed, or even simply as a result of time. If you notice a bulb has loosened from its base, EVEN IF the bulb is still working, you MUST turn off the power IMMEDIATELY and then you MUST replace the loosened bulb and remove the base from the socket.
 - Turning off the power before attempting to turn, loosen or move a loose bulb is critical. If you do not turn off the power first, then when you go to turn the bulb, the two wires inside the base will touch each other while electricity is running through them, causing a dead short.

Using Your Smart Chaser: How to Set Your Chase Sequence

Important: Anytime that you change the sequence you MUST unplug the controller box and then plug it back in AFTER you have set the dip switch sliders to the new sequence code for the change to take effect.

- To set your chase sequence, first look at the chase sequence label (printed at the bottom of this page and on the top of your controller box) to see which pattern you would like to use.
 - If you are not sure, see pages 5-6 of this manual for descriptions of the effect each available pattern creates. For more detail, go to our website at www.FlashTrackLighting.com, to see animated examples of each available pattern. IF you are still not sure, contact us and we can help you figure out which sequence to use for your display.
- Then, find the corresponding Code Setting (the associated sequence of 0s and 1s) on the Sequence Label.
 - When looking at the code setting (the sequence of 1s and 0s), 1 represents up/on and 0 represents down/off.
- Once you have found the setting for the chase sequence you want to run, open the controller box and set the dip switch to your desired sequence.
 - To locate the dip switch, open the top cover of the box. The dip switch has 4 sliders located in the bottom right end inside the box. You may need a pen or other small item to change the positioning of the individual slides, since they are rather small.
 - To set the dip switch to your desired setting, simply adjust the 4 sliders on the dip switch to the up-on-1 positions and down-off-0 positions that correspond with the sequence you want to run.



Flip the 4 sliders Up (on) or Down (off) to select your sequence.
Slider 1 is the first slider on the left.

Use dip switch on circuit board to select chase seq.
Move slides to match setting. 1=On/Up 0=Off/Dn
Un-plug the controller box before changing setting.

<u>Sequence Label</u>		Max.
Seq #	Code Abbrev. Description	Amps per Receptacle
1	1000 2TC 2Track Chase	10
2	0000 3TC 3Track Chase	10
3	1100 3TW 3Track Wave	10
4	0001 2TCS 2T Chase Slow	10
5	0010 3TCS 3T Chase Slow	10
6	0011 3TWS 3T Wave Slow	10
7	0100 2TCD 2T Chase w/Delay	10
8	0101 3TCD 3T Chase w/Delay	10
9	0110 3TWD 3T Wave w/Delays	10
10	0111 3TCB 3T Chase w/Blank	10
11	1001 3TNC 3T Negative Chase	5
12	1010 2TBU 2Track Build Up	5
13	1011 3TBU 3Track Build Up	3
14	1101 3TS 3Track Speller	3
15	1110 2TM 2T Multi-Sequence	5
16	1111 3TM 3T Multi-Sequence	3

A 10 Amp 32 V ¼ by 1 ¼ fuse is located on the circuit board.

For example: To select a 2 Track Chase, the setting is “1000”.

Adjust the 4 sliders on the dip switch, going from left to right, to correspond to that setting. The first slider should be in an on/upward position (flipped up), to turn it “on” as indicated by the “1” in the code setting. (The first slider is located at the left end of the dip switch.) The rest of the sliders (sliders 2, 3, and 4) need to be set to the downward/off position (flipped down), as indicated by the “0”s in the code setting.

Anytime that you change the sequence you MUST unplug the controller box and then plug it back in AFTER you have set the dip switch sliders to the new sequence code for the change to take effect.

It is also critical that you unplug the controller BEFORE touching the board to avoid shock. There are multiple pieces on the board that will shock you if you handle them while the controller is running.

Using Your Smart Chaser: Plugging Lights In, Setting Speed, and Mounting the Controller

Plugging your Lights in

Always plug your lights into a separate outlet or extension cord first to test them, THEN, once you are sure that there are no shorts, plug the controller box in. Next, plug the lights into the receptacles on the bottom of the controller box. This controller has no power on/off switch, so if your lights are plugged into the controller's receptacles, and your controller is plugged in, then your lights should turn on and off according to the chase sequence that is set.

Once you plug your lights into the controller receptacles, if you are looking inside the controller box, you should see a few red lights turn on inside the box. Each light indicates that the associated track has power and is turned on. Each receptacle is one track. If you would like your lights to chase in the same pattern but in the opposite direction, simply reverse the plug-in order of your lights.



Keep in mind that a typical household circuit and receptacle is only rated at 15 amps. (This should not be a problem, since this controller is only rated for up to 10 amps.)

How to Adjust Your Chase Pattern's Speed

For most chase patterns, the speed range can be adjusted from 1/20th of a second to 2 seconds per step. Slow patterns can usually be adjusted to select a speed between 2 and 6 seconds per step.

To adjust the speed, twist the speed pot dial, located on the underside of the controller box, at the center right end. Twisting the dial left will slow the speed down while twisting the dial right will make your lights chase faster. If you lift the cover of your controller, you will see red LED track indicator lights flashing inside the box. The speed at which the red lights flash on and off is the speed at which your chase lights are currently set.

Mounting the Controller

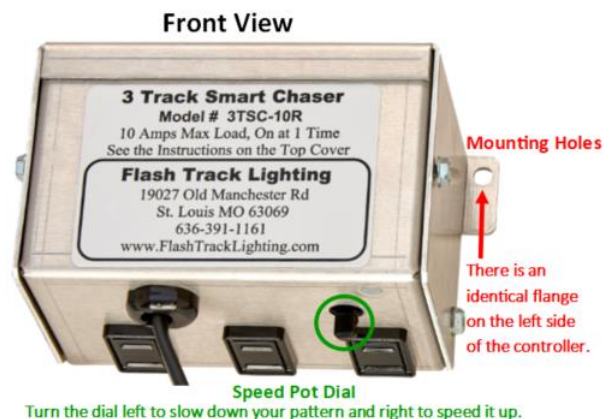
When mounting the controller, the controller must be in an upright position. The receptacles should be facing downward and the Sequence Label should be on top.

The controller must be mounted off of the ground. While the controller can withstand rain or snow, it cannot sit in a puddle of water.

Use the mounting holes to secure the controller off the ground, in an upright position.

You can do this with screws or wire ties.

Make sure the controller is at least 12 inches off the ground.



About Amperage

About the Maximum Load: What 10 Amps ON AT ONE TIME Means

The maximum load for the 3 track smart chaser is 10 amps ON AT ONE TIME, *not necessarily per receptacle*. This means that you have to pay attention to which pattern you choose when determining how many amps you can run per receptacle, since different patterns have different numbers of tracks on at one time, and 10 amps is the maximum load that this controller can handle at any one time.

For most of the sequences available on the 3 track smart chaser, only 1 receptacle is turned on at any given moment. This means that *for most of the available sequences, you can run up to 10 amps per receptacle*.

However, in *some* of the available sequences, there are times in the pattern where ALL of the receptacles turn on at the same time. This means that if you are running a sequence that includes an “all on” step, your display’s TOTAL amperage, for all the receptacles that you are using combined, must be 10 amps or less. *Patterns that include an “all on” step are Speller, Build Up, Multi-Sequence, and Negative Chase. In order to use ANY of these patterns in 2 or 3 track modes, your total amperage for ALL of the tracks in your display cannot be over 10 amps* – if your display’s total amperage is over 10 when using any of these patterns, you will probably blow a fuse.

How to Estimate Your Amperage

To estimate amperage, you can use the table below for a quick reference estimate OR you can use the formula on the next page for a more exact figure.

Keep in mind that the maximum load (either 10 amps per receptacle OR 10 amps total for the receptacles that will be on at the same time) only applies to the load of the lights that you will be plugging into your controller. You do NOT need to include the lights for the rest of the display (that you will NOT be plugging into the controller) in these calculations.

Which pattern are you choosing? If it is a pattern with an “All On” step (Speller, Build Up, Multi-Sequence, or Negative Chase), add up all of the bulbs. For any other patterns, just count the bulbs per receptacle.

To estimate the number of bulbs that may be turned on per amp (amperage load), see the following chart.

Quick Reference Amperage Load Chart

Type of Light	# = 1 amp	# = 3 amp	# = 5 amp	# = 10 amp	# = 15 amp
C9 Incandescent 9 watt	14 bulbs	42 bulbs	70 bulbs	140 bulbs	210 bulbs
C7 Incandescent 7 watt	18 bulbs	54 bulbs	90 bulbs	180 bulbs	270 bulbs
C7 Incandescent 5 watt	21 bulbs	63 bulbs	105 bulbs	210 bulbs	315 bulbs
Rope Light, Incandescent	21 feet	63 feet	105 feet	210 feet	315 feet
C9 LED	140 bulbs	420 bulbs	700 bulbs	1,400 bulbs	2,100 bulbs
C7 LED	180 bulbs	540 bulbs	900 bulbs	1,800 bulbs	2,700 bulbs
Mini Lights Incandescent	300 bulbs	900 bulbs	1,500 bulbs	3,000 bulbs	4,500 bulbs
Mini Lights LEDs	3,000 bulbs	9,000 bulbs	15,000 bulbs	30,000 bulbs	45,000 bulbs

How to Estimate Your Amperage Continued

To calculate a more exact estimate of your amperage, use the formula below.

To calculate your amperage, use the maximum number of bulbs that will be on at 1 time as follows:
 $(\# \text{ of bulbs} \times \text{bulb wattage}) \div 110 = \text{Amps Needed.}$

Example:

If 250, 7 watt bulbs will be on at 1 time, solve $(250 \times 7) \div 110 = 16$ amps.

This example would NOT be an acceptable load for the 3 Track Smart Chaser since it is only rated for 10 amps on at one time.

If you find yourself in need of more than 10 amps, consider our 4, 6, or 8 track smart chasers, which can handle up to 18 amps on at one time, or contact us to discuss programmable controllers, which can handle higher amperage loads.

We can help you make sure your calculations are correct, and if your display does require more than 10 amps, we can help you evaluate if a 4, 6, or 8 Track Smart Chaser, or alternatively, if a Programmable Controller, is the best choice for your display.

Troubleshooting

- What to do if your controller won't turn on
 - 1) First, make sure your controller is plugged into a working outlet. (Plug something else into the outlet to make sure the outlet works.)
 - 2) Next, take the cover off the controller using a screwdriver, and look at the board. If the controller is getting power, you will be able to see a red light that is on.
 - If you see the red light, but your controller will not turn on, then you probably accidentally set your controller to a blank setting.
 - Turn all of the dip switches to the "off" position. Then, unplug the controller to re-set the sequence, and then plug it back in. With the cover off, while looking at the board, you should be able to see red lights chasing through all 3 tracks. If you see the red lights chasing, then your controller should work properly once you set the dip switch to your desired setting.
 - If you do not see the red light at all, then check that the fuse is working and not blown. (See next section for more about how to change a fuse.)
 - If the fuse is working, and the controller is plugged into a working outlet, but has no red light coming on, contact us for assistance and possible repairs.
- What to do if you need to replace your fuse:
 - 3) The fuse is a common ¼ inch by 1 ¼ inch round glass fuse that can be replaced with any 10 amp or less, 32 volt fuse.
 - 4) This is a VERY common fuse that can usually be purchased for less than a dollar in any hardware, automotive, general merchandise, or even grocery store.
 - 5) In order to replace the fuse, open the controller box with a screwdriver. If you think the fuse is bad, pry the damaged fuse out of its clips and push in the new fuse. You should be able to do this by hand.

Troubleshooting Continued

- What to do if your controller stops working after it had started running:
 - 1) First, determine whether or not the receptacle has power.
 - If the receptacle does NOT have power, you could have tripped the breaker in the fuse box OR you could have tripped the GFI receptacle.
 - First, check to see if you tripped a breaker in the fuse box. If you did, flip the breaker back on AND check the amperage load of EVERYTHING you have plugged into all of the outlets on that circuit. Most household circuits can only handle up to 15 amps for ALL of the receptacles wired to that 1 breaker.
 - If you did NOT trip a breaker in the fuse box and you still don't have power to the receptacle, you need to see if you tripped the GFI receptacle. Every outdoor receptacle and garage receptacle is protected by a GFI circuit. One GFI receptacle can turn off the power to all of the receptacles it protects. You will need to find your GFI receptacle in order to check whether or not it has been tripped.
 - If the receptacle DOES have power, but the controller has stopped working, unplug the controller to see if a fuse is blown. Replace the fuse if needed. (See the previous page for directions on how to replace the fuse.)
- What to do if you short out a track:
 - 1) If you test your lights prior to plugging them into the smart chaser, it is extremely unlikely that you will short out any tracks.
 - 2) If you do short out one or more tracks on your smart chaser:
 - Option 1: Depending on which track(s) are out, you may still be able to use the working tracks for a different display.
 - Option 2: IF you have ANY 2 still working, we have coded alternate sequences into the controller that will allow you to 2 track chase with whichever tracks are working. We call this feature "Re-Purposing" your controller. See the "Instructions" tab on our website, www.FlashTrackLighting.com, for more information on how to use this feature.

If you have any problems with your smart chaser, you are always welcome to email us at Nick@FlashTrackLighting.com or call us toll free at 1-877-391-1161.

- When you contact us, you will be talking directly to our chase light controller expert, the designer of your product! We can walk you through troubleshooting to help you find the problem, and we can advise you on your repair and/or replacement options.
- If you call and we do not answer, please DO leave us a voicemail and we will get back to you promptly. Our office hours vary, but are generally from 9am – 5pm, Monday-Friday, excluding holidays. We are often available after hours, and typically work longer hours during the Christmas holiday lighting season, so if you have a question on the weekend or after hours, please feel free to call us anytime.

Product Warnings and Safety Precautions

Keep in mind that this chase light controller runs on electricity, so you DO need to take all of the necessary safety precautions when handling this controller that you would when handling any electrical device.

- Always unplug the controller before removing the cover and before adjusting the dip switch settings.
- When using the controller outside, always mount it at least 12 inches off the ground.
 - This controller cannot sit in a puddle of water.
 - If water gets inside the controller box, it could not only damage the controller, but could also result in electrocution IF you handle the box before unplugging it.
 - Make sure you are standing on a dry surface when handling the controller while it is plugged in.
- Always plug the controller into a 3-prong outlet that is on a GFI protected circuit.
 - Do not plug the controller into a receptacle on a rip cord.
 - Do not remove the safety ground pin from the controller's plug.

If the inside of the controller gets wet, unplug the controller, remove the cover, and let it dry out. (You can use a heating vent or hair dryer.)

- Do NOT run the controller while the inside is wet – this can result in permanent damage to the controller's circuit board.