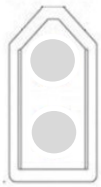
# Hamilton City Train Molex Colors

## PINS AND HOUSING CONNECTORS .093

**MALE HOUSING**

**The housing is hollow and each pin sticks up within the outer wall that will encircle the female housing.**



**FEMALE HOUSING**

**The female pins are inset within the housings to maintain them from being separated when inserting the male pins.**

**Note this is the way that I started using the housings over 30 years ago.**

**I suggest we adopt this file for the Hamilton City Train Layout Currently we are only using the 12 pin buss and the 12 V AC for Accessory Lighting.**

**All AC Common wiring is connected to the common WHITE wire no matter the voltage.**
**The color wires assigned are to be used in the plugs to help identify the voltage by the installer and or the trouble shooter.**

**The plan at this time is to start purchasing LED bulbs that will work on either AC or DC installation.**
**If attached to AC the leads can be attached in either way. All Hot or Positive should be attached together Wired to the ORANGE lead to the Molex plug. All Common or Negative from the lights should be attached together and wired to the WHITE Molex plug.**

**If attached to DC power then the positive MUST go to positive RED 12 V DC Buss wire if we use it. Then the negative wires to negative BLACK Buss 12 V DC Wire if we use it.**

## 12 Volt AC Male Housing

**Currently this is the only Molex Accessory voltage listed on the layout. Note the Male Molex is mounted to the module and the Female is on the building leads.**

**White AC Common**

**Orange AC Hot**

# Hamilton City Train Molex Colors

## Buss Wiring Pin Number and Colors

### This list Matches the current tracks Upper and Lower Level

**Buss is complete around the modules on the lower level, (Full Circle). All upper level modules will be connected directly to the lower level buss. No second buss on the upper level because there will never be a need to set up those 4 modules alone for any operation. All Buss wires are 14 Gauge including the 4 leads from the Buss to the Male connector going to the upper modules. Only exception is for the 12 V DC Pos and Neg which is 16 Gauge, in a sheath.**


Male Molex Plug


Female Molex Plug

**Pin 1 = White - Common AC Ground**
**Pin 2 = Blue - Track 1 Upper Level Trolley**
**Pin 3 = Black - Track 2 Upper Level Inside**
**Pin 4 = Red - Track 3 Upper Level Outside**
**Pin 5 = Yellow - Track 4 Lower Level Trolley**
**Pin 6 = Brown - Track 5 Lower Level Inside**
**Pin 7 = Gray - Track 6 Lower Level Outside**
**Pin 8 = Orange - Accessory 12 or 14 V AC #1**
**Pin 9 = Purple - Accessory 12 or 14 V AC #2**
**Pin 10 = Green - Prefer a different color**
**Pin 11 = Black - 12 V DC Negative 16 Gauge Buss**
**Pin 12 = Red - 12 V DC Positive 16 Gauge Buss**

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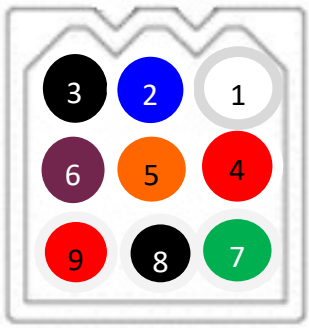
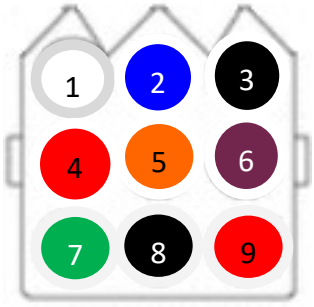
## Pin Number and Colors

### This list Matches the current tracks Upper Level

**All connection are by cable from each upper module to the Buss on the lower level. All Buss wires are 14 Gauge except for the 12 V DC Pos and Neg which is 16 Gauge.**




Male Molex Plug



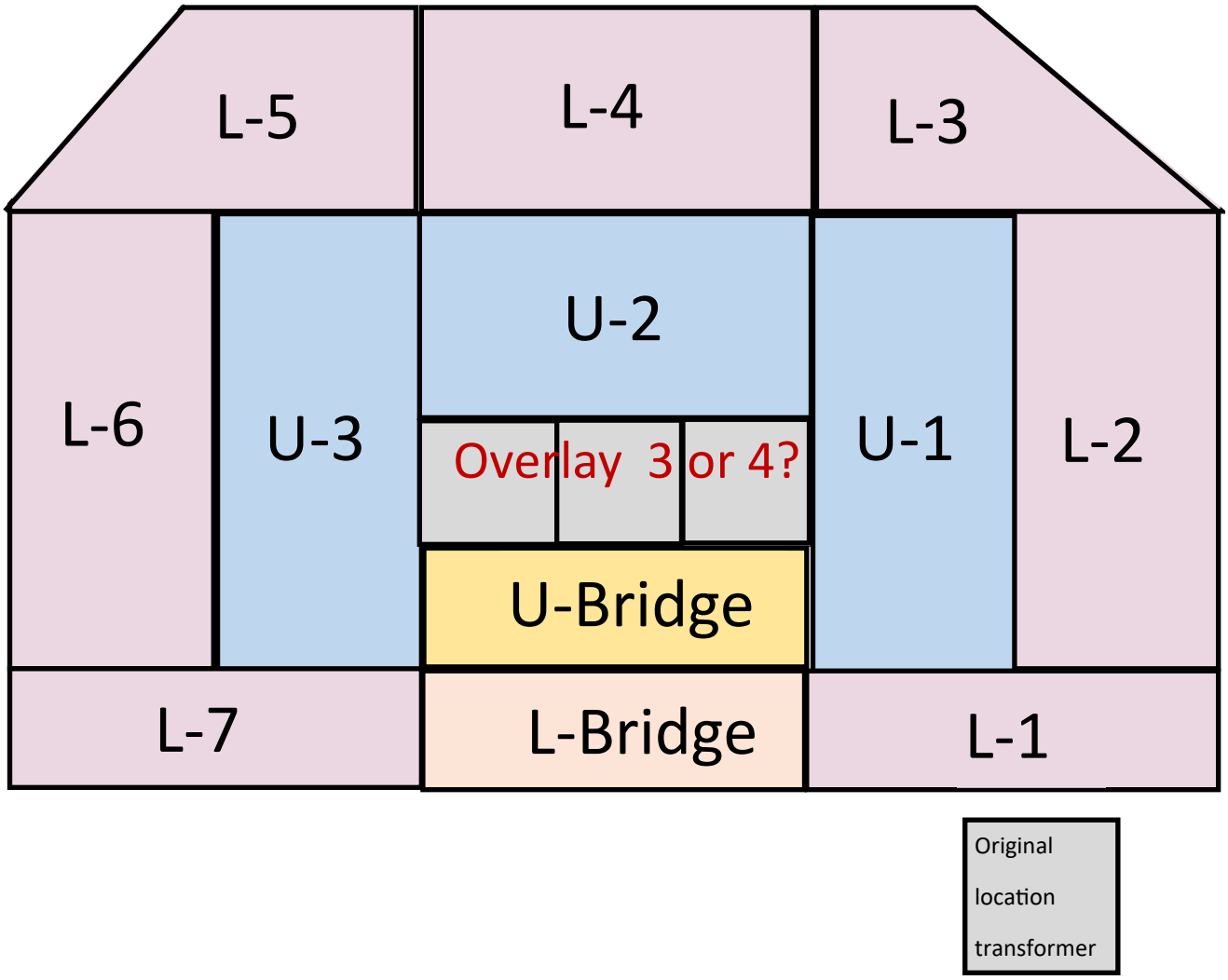

Female Molex Plug

**Pin 1 = White - Common AC Ground**
**Pin 2 = Blue - Track 1 Upper Level Trolley**
**Pin 3 = Black - Track 2 Upper Level Inside**
**Pin 4 = Red - Track 3 Upper Level Outside**
**Pin 5 = Orange - Accessory 12 or 14 V AC #1**
**Pin 6 = Purple - Accessory 12 or 14 V AC #2**
**Pin 7 = Green - Preferred a different color**
**Pin 8 = Black - 12 V DC Negative 16 Gauge Buss**
**Pin 9 = Red - 12 V DC Positive 16 Gauge Buss**

**Please note that to keep from messing up with using Black & White for the DC and the track power, we should use the 16 gauge B&W in a sheath. From Transformer to modules.**

Update this page 26-05-22

# This is a drawing of suggested renumbering of the modules




## This drawing is my suggestion on numbering the modules

**The Transformer was originally set up in the corner as shown.**
**I started in that corner with L-1 (Lower Level 1) numbering Clockwise with the Bridge Marked Lower Bridge.**
**Then the same for the U-1 (Upper Level U-1). (YES you can write our UPPER and LOWER.**

**The Transformer cart can be set up anywhere on the modules by Simply plugin in the 2 leads from the card to the jumper plugs between any set of modules.**

**I am suggesting to treat the upper level as the lower modules connections directly to Lower Buss with same Jumper connections that will be 9 pin Molex pins from Module to Module.**

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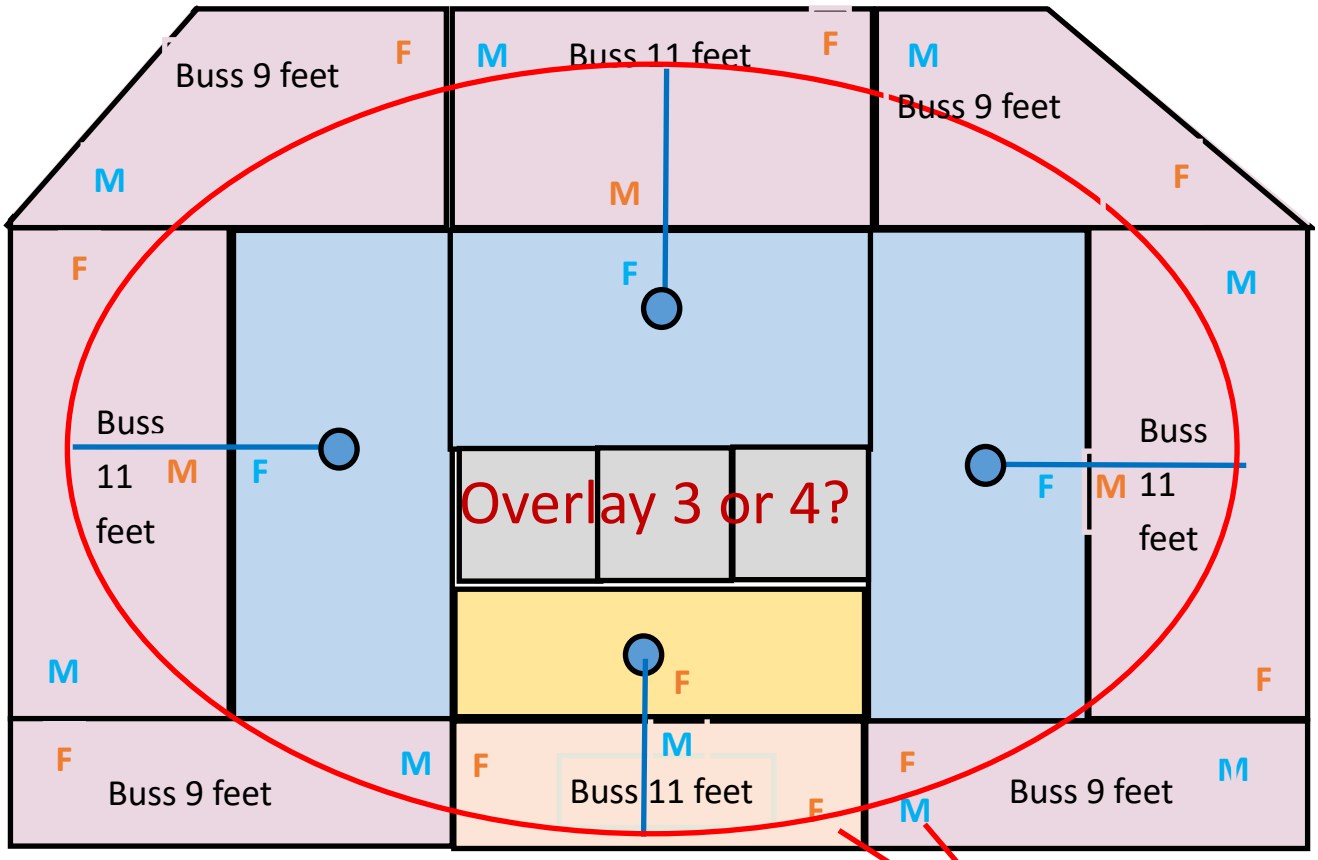
# This is a drawing Buss wiring for the modules




## This is a drawing of Suggested wiring of the layout

**LOWER LEVEL**

**Red Oval is a buss with all 10 current wires 14 gauge plus Red and Black 16 Gauge for DC decided to install using the Red and Black in a sheath to prevent from attaching to track power.**

**Transformer cart attached by a cable to the buss wire. Built to plug into any two connecting modules.**

**Each M and F are the jumper connections between all of the lower modules including the bridge.**

**UPPER LEVEL**

**No Buss wires**

**All tracks and accessory wiring should have at least 1 drop for all connections on each module**

**Wired together with 9 pin Molex connection (Color Coded) under the board and wired to the jumper cable to go to lower level jumper.**

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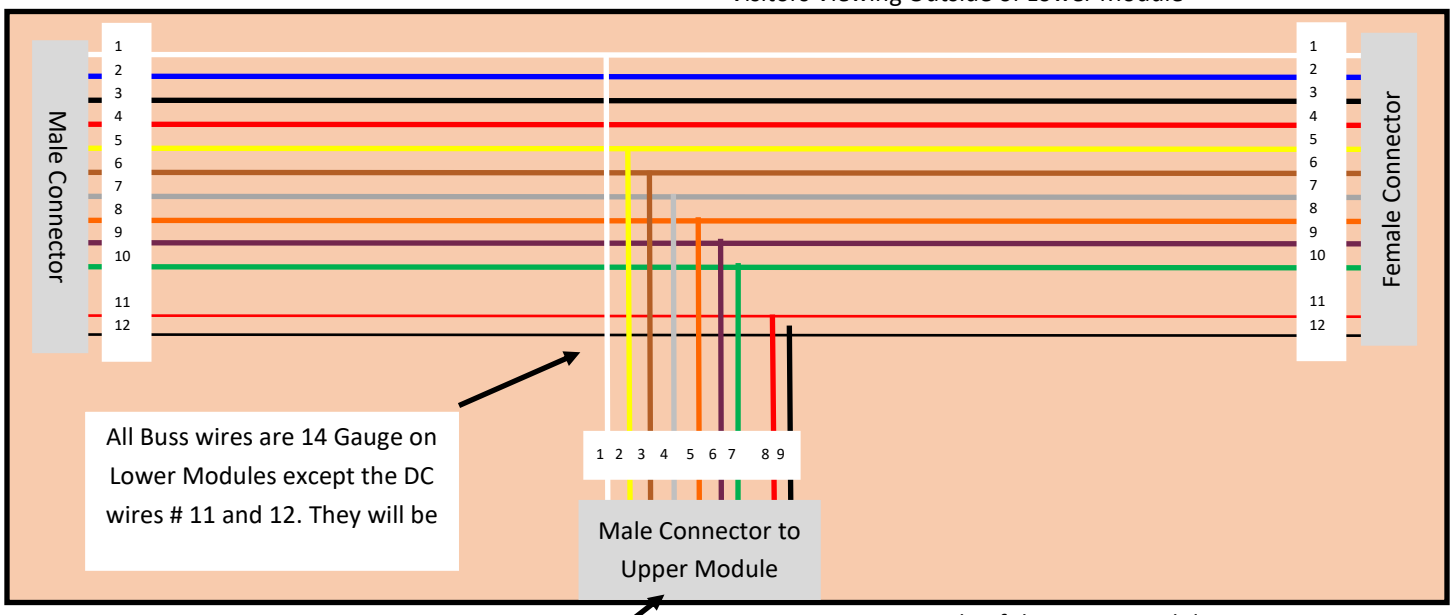
Visitors Viewing Outside of Lower Module

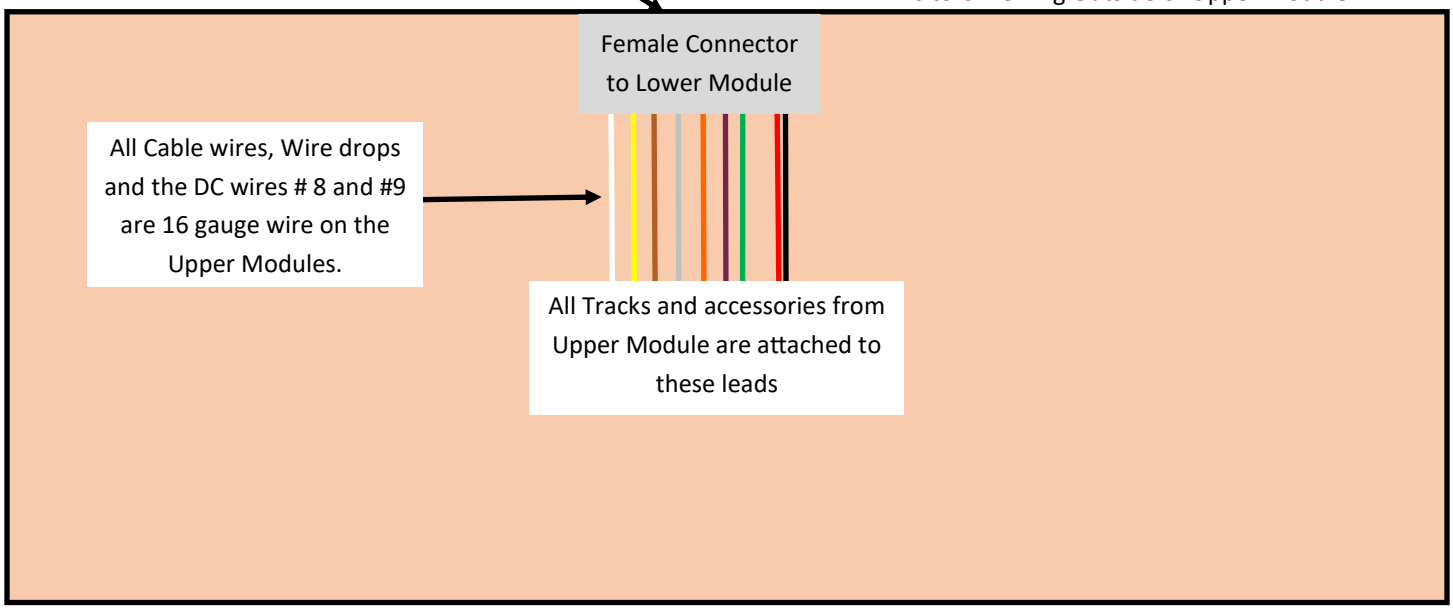



Inside of the Lower Module

The two modules are connected with a pair of 9 Pin (0.093) Molex Connectors

There are 3 modules and the Upper Bridge. All 4 will have connectors to the Lower Modules. Location to be determined upon wiring.

Visitors Viewing Outside of Upper Module



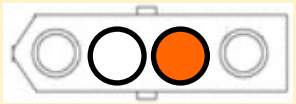

Inside of the Upper Module

## 0.093 - 4 Pin Male Housing & 0.093 4 Pin Female Housings



Pin Location # 1 2 3 4

Male Molex Plug



Pin Location # 1 2 3 4

Female Molex Plug

Wire colors for the Pin Locations both Male and Female 4 pin Molex Connectors:
All are wired for 12 V AC and will have LED bulbs and Incandescent attached

1 Is Blank
2 Is the White Common Wire
3 Is the Orange Hot Wire
4 Is Blank

The male housing will be attached to whatever board needed and the White and Orang wires will be attached on the underside to the buss wires.

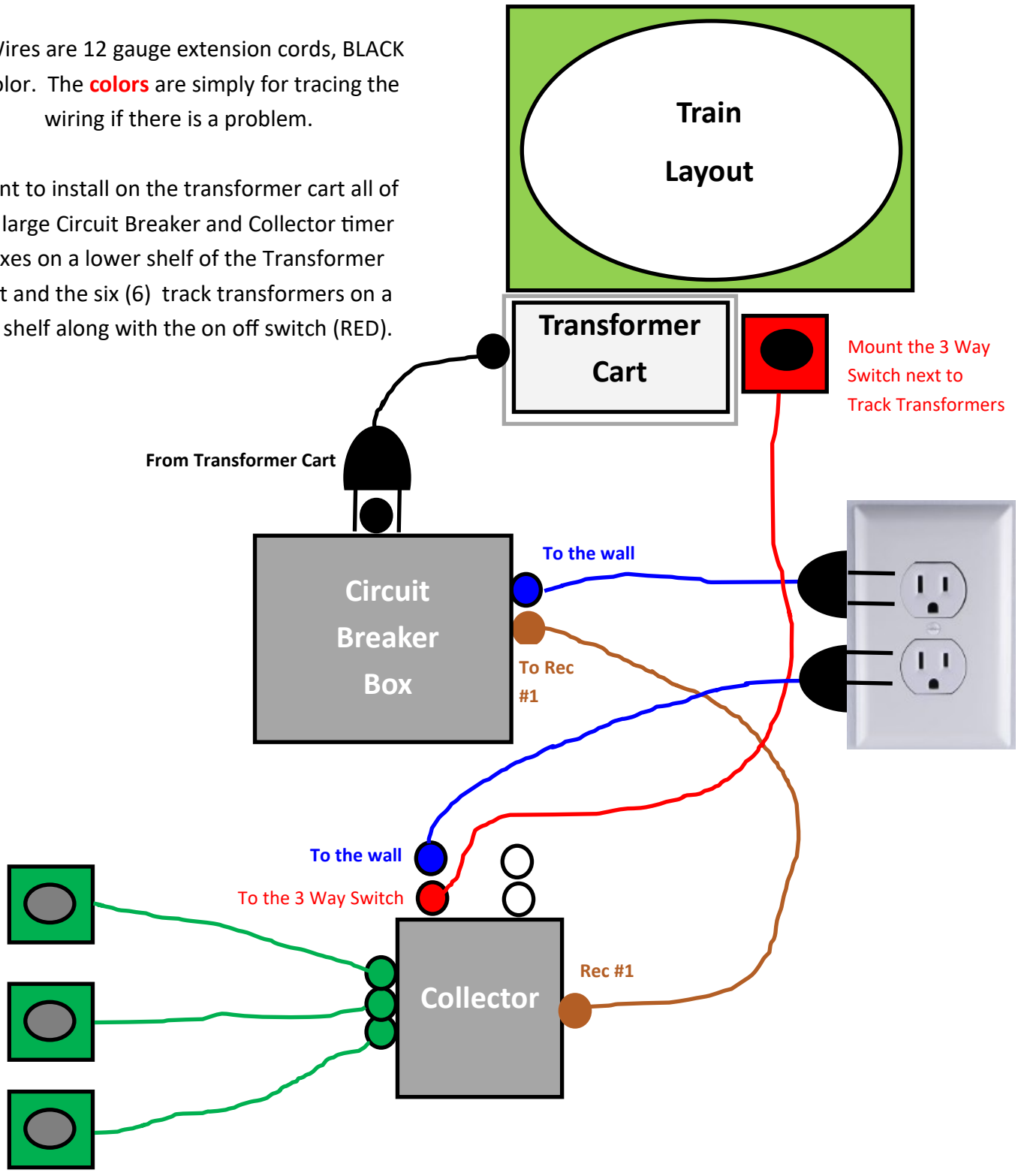
The Female housing will be attached to the leads coming from the accessory and will not be able to be detachable. Incandescent bubs and LED bulbs will be wired alike.

Common or Negative wires will be attached to the White wire coming from the Molex Plug.
Hot or Positive wires will be attached to the Orange wire coming from the Molex Plug.

# Button / Timer Control

All Wires are 12 gauge extension cords, BLACK in color. The **colors** are simply for tracing the wiring if there is a problem.

I want to install on the transformer cart all of the large Circuit Breaker and Collector timer boxes on a lower shelf of the Transformer Cart and the six (6) track transformers on a top shelf along with the on off switch (RED).




## 3 PUSHBUTTONS ATTACH TO THE FRONT OF THE LAYOUT

All Molex connections listed are from the power source

THE ONLY VOLTAGE USED AT THIS TIME IS 14 V AC FOR ALL ACCESSORIES

THERE ARE 3 ACCESSORY CIRCUITS USING ORANGE GREEN AND PURPLE.

| VOLTAGE | MOLEX PINS | HOT / POS | COM / NEG | COLORS |
|---|---|---|---|---|

## All train Tracks are Alternating AC Current

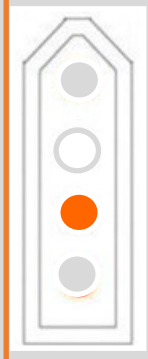
**Up to three 12—14 V AC Accessory lines ORANGE PURPLE and maybe GREEN.**

| COMMON | ALTERNATING | WHITE | WHITE | WHITE |
|---|---|---|---|---|
| **12 V AC** | **ACCESSORY #1** | **ORANGE** | **WHITE** | **ORANGE** |
| 14 V AC | ACCESSORY #2 | PURPLE | WHITE | PURPLE |

One 12 Volt DC line for one DC operated items.

| Negative | Direct | Black | Black | Black |
|---|---|---|---|---|
| 12 V DC | 4 Female | Red | Black | Red |

## 12 Volt AC Male Housing



Currently this is the only Molex Accessory voltage listed on the layout. Note the Male Molex is mounted to the module and the Female is on the building leads.

**White AC Common**

**Orange AC Hot**

We are converting all bulbs as much as possible from 12 to 14 V AC to LEDs that will operate on 12 to 18 volt DC.

All Positive leads will be connected to the Orange accessory leads 12 V AC.
All negative leads will be connected to the White Accessory leads 12 V AC

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