

Thank you for purchasing a TS series traffic light controller. By design, all TS Series controllers are built for ease of use and years of trouble free operation and enjoyment. While manufactured in the USA, all controllers are inspected and tested prior to shipment for reliability. Please refer to the following information on your TS series controller.

What's included: (Controller Only)

- 1x - TS Series Controller
- 4x - Adhesive Mounting Posts

Components included as a "Kit": (Optional)

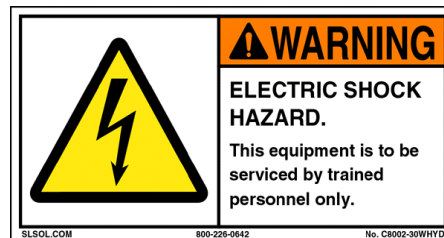
- 1x - Power Cord - *(May vary slightly by color and/or length)*
- 1x - Hook-up Wire w/ Fork Ends*

* TS12 Series Include 2x - Hook-up Wire w/ Fork Ends.

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GENERAL SPECIFICATIONS (**)

| | |
|---------------------------|---|
| <u>Dimensions:</u> | Circuit Board Size TS10 Series - 3" x 3" TS12 Series - 3" x 3.5" |
| <u>AC Power:</u> | 120VAC - Fused TS10 Series - 2A Max. TS12 Series - 3A Max. <i>(220VAC Optional - available by request)</i> |
| <u>Fuse:</u> | TS10 Series - 5x20mm 250V/2A TS12 Series - 5x20mm 250V/3A |
| <u>Wire Size:</u> | 16 - 22 AWG - Recommended_ |
| <u>Output Power:</u> | 120VAC / 150W Max. - Each Channel (^) |
| <u>Time Delay:</u> | 30 - 300 Seconds / 30s - 5min - Cycle Time (~) <i>Yellow remains a 5 second timing at any cycle time.</i> <i>(~ TS10 - Toggle Mode .1-1.25 Seconds)</i> |
| <u>Time Adjustment:</u> * | Counter-Clockwise = Slow Clockwise = Fast |

**Note: Time adjustment is single turn, similar to radio volume knob. Do not force beyond stopping points, as this will cause permanent damage.*

*^Note: Output power is compatible with both L.E.D. and incandescent lighting.
NOT RECOMMENDED FOR INDUCTIVE LOADS.*

***Note: General specifications are subject to change without notice.*

INSTALLATION & SAFETY TIPS

1. **Warning!** - Never handle controller while powered on.
2. Do not install in damp, or wet environments.
3. Only replace fuse with equivalent size and rating.
4. Remove power for bulb replacement and/or servicing of any type.
5. Do not overload outputs beyond maximum rated specification - 150 Watts.
6. When connecting more than one incandescent bulb to a single output, divide the desired bulb wattage by 150 Watts. The result will be the number of bulbs of the desired wattage that can be used on a single output.

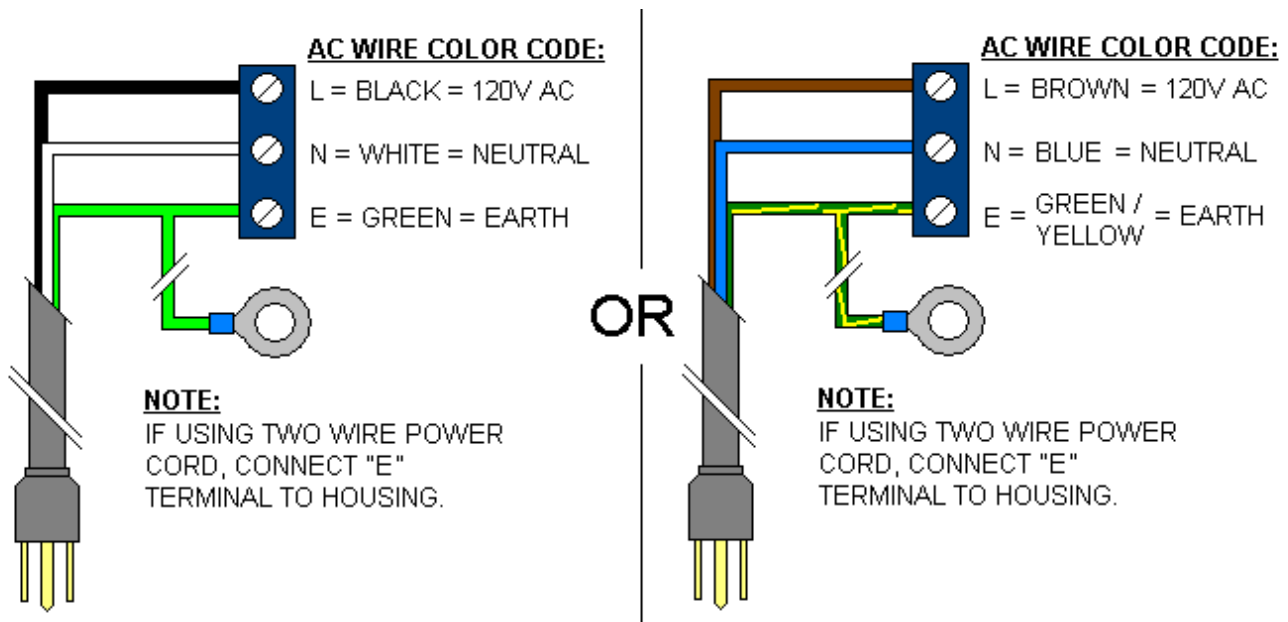
Example:

How many 40 Watt bulbs can I connect to a single output rated at 150 Watts?

$$150 \text{ Watts} / 40 \text{ Watts} = 3.75 \sim 3x - 40 \text{ Watt bulbs}$$

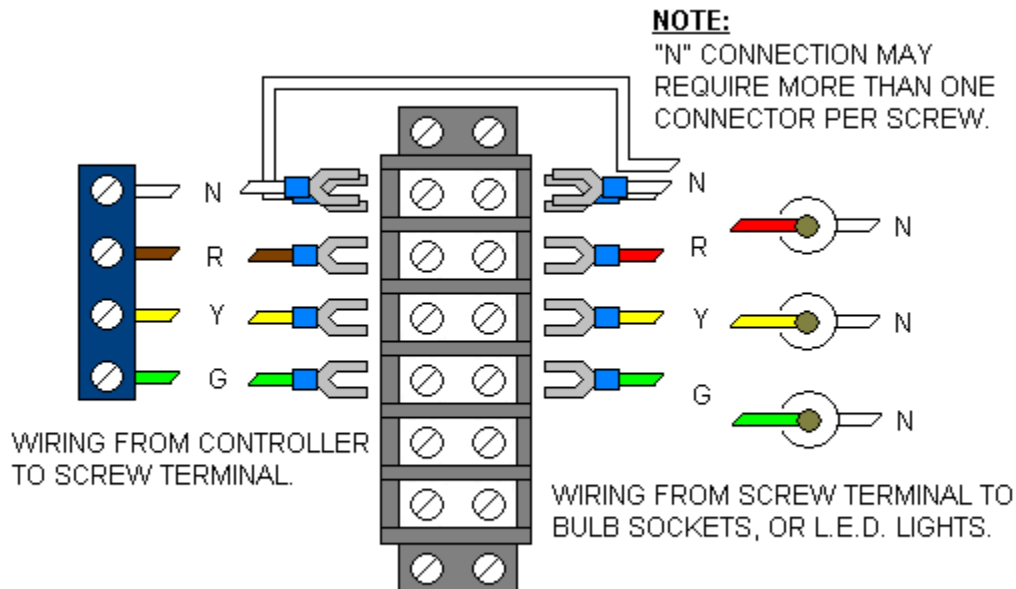
The number of 40 Watt bulbs that can be connected to a single output without overload is 3.

7. For AC power connection, follow the wiring diagram below.



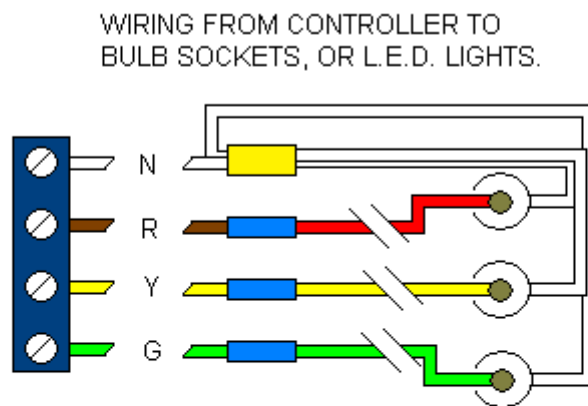
Caution! If you need assistance, please consult a qualified electrician.

8. If your signal is equipped with a screw-terminal block, you may reference the following diagram.



Caution! If you need assistance, please consult a qualified electrician.

9. If your signal is *not* equipped with a screw-terminal block, you may reference the following diagram(s).

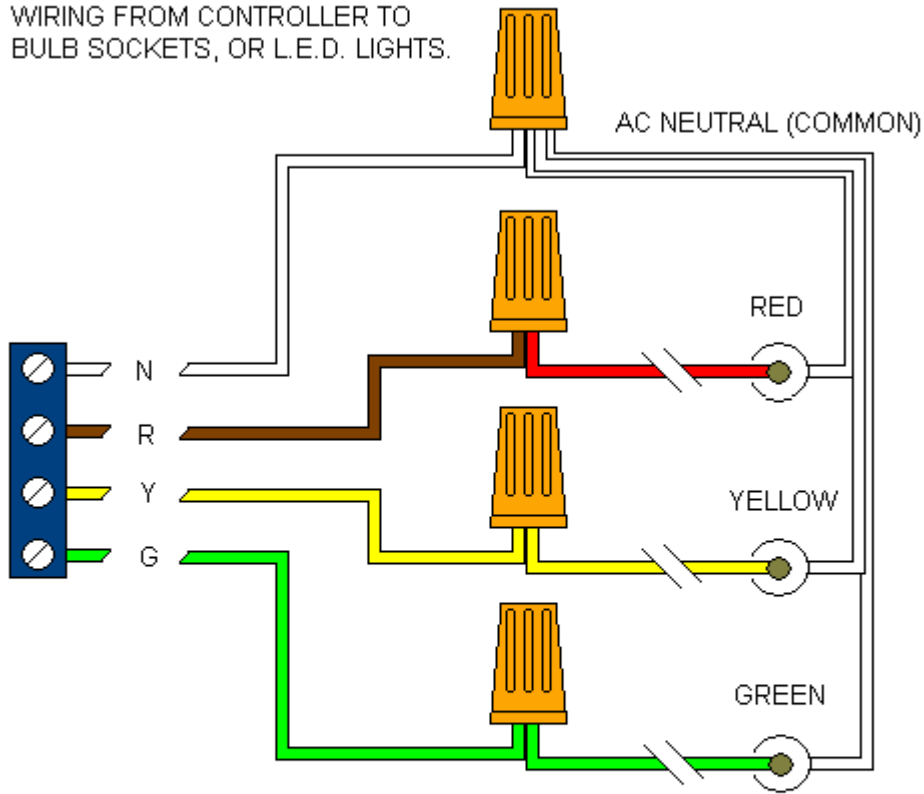


CONNECTIONS CAN BE MADE WITH WIRE NUTS, OR "CRIMP TYPE" SPLICE CONNECTORS.

NOTE:

IT IS RECOMMENDED TO WRAP ALL CONNECTIONS INDIVIDUALLY WITH ELECTRICIANS TAPE, ONCE COMPLETED.

WIRING FROM CONTROLLER TO BULB SOCKETS, OR L.E.D. LIGHTS.

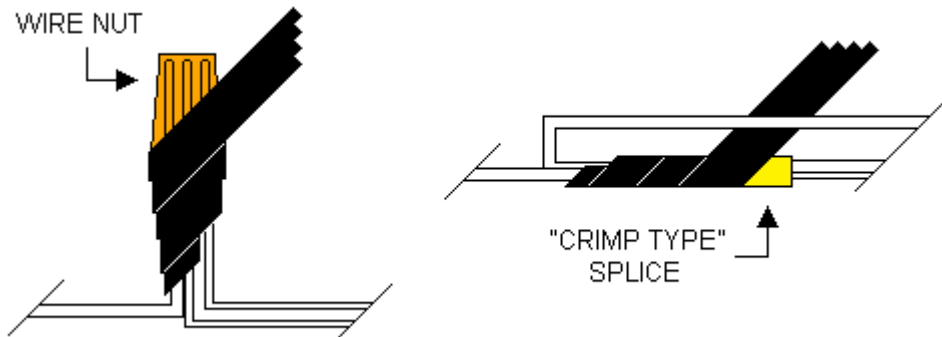


CONNECTIONS CAN BE MADE WITH WIRE NUTS, OR "CRIMP TYPE" SPLICE CONNECTORS.

NOTE:

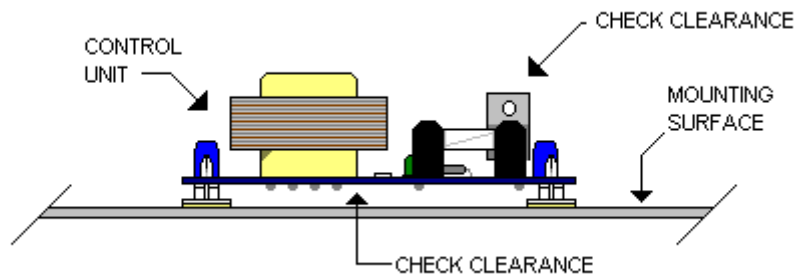
IT IS RECOMMENDED TO WRAP ALL CONNECTIONS INDIVIDUALLY WITH ELECTRICIANS TAPE, ONCE COMPLETED.

Caution! If you need assistance, please consult a qualified electrician.



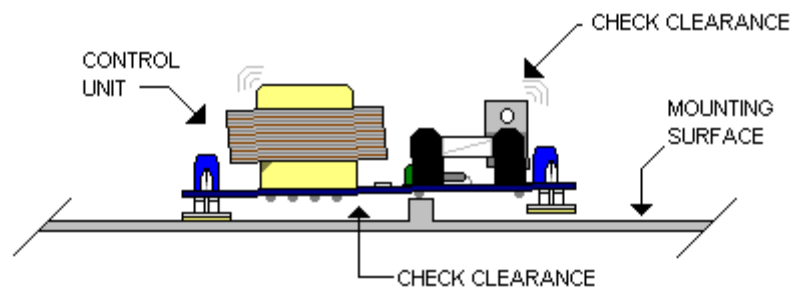
CONTROL MOUNTING

1. Before mounting, be sure mounting surface area is smooth, clean, dry, & oil free.
2. Be sure mounting location allows enough clearance area around the control unit, where metal components will not come into contact with the bottom, or components on the top side of the control unit.
3. **Do not** route wiring underneath control unit.



RIGHT / CORRECT !!!

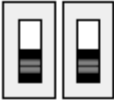




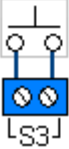
Caution!: *If you need assistance, please consult a qualified electrician.*



WRONG / INCORRECT !!!

CONTROLLER SWITCH SETTINGS

TS10 Switch Settings S1, S2, & S3 :

| | |
|---|---|
|  | Standard G.Y.R. Signaling : "Standard" Green, Yellow, Red signaling. Yellow remains a 5 second timing at any cycle time set point. (<i>Factory Default</i>) |
|  | G.Y.R. Signaling w/ Yellow Overlap (U.K.) : Green, Yellow, Red signaling, with 2 second Yellow overlap on Red before Green. Also includes Red / Red delay and 5 second Yellow. (<i>Plessey Tin Lantern</i>) |
|  | Pedestrian / Crosswalk Signaling : Crosswalk signal operation beginning with "Walk", to "Don't Walk" (Flashing), then Don't Walk (Steady). Don't Walk (Flashing) remains a 10x count at any cycle time set point. |
|  | School Zone / Caution / RxR Signaling : Toggles Red & Yellow outputs, also known as "Wig-Wag". Green output is on (Steady). Toggle speed is adjustable via time delay adjustment. |
|  | Flashing Red / Don't Walk - Override : Toggles Red output on/off, for Flashing Red, or Flashing Don't Walk. Optional switch, normally open contact (N.O.) can be added. Overrides S1 & S2 settings when closed (Shorted). |
|  | Optional Push Button Input - (Ped / Crosswalk Mode) : Changes signal to "Walk" during "Don't Walk" cycle (Steady). Optional push button, normally open contact (N.O.) can be added. |



Push button option is standard on all current TS10's manufactured after 9-1-2011.

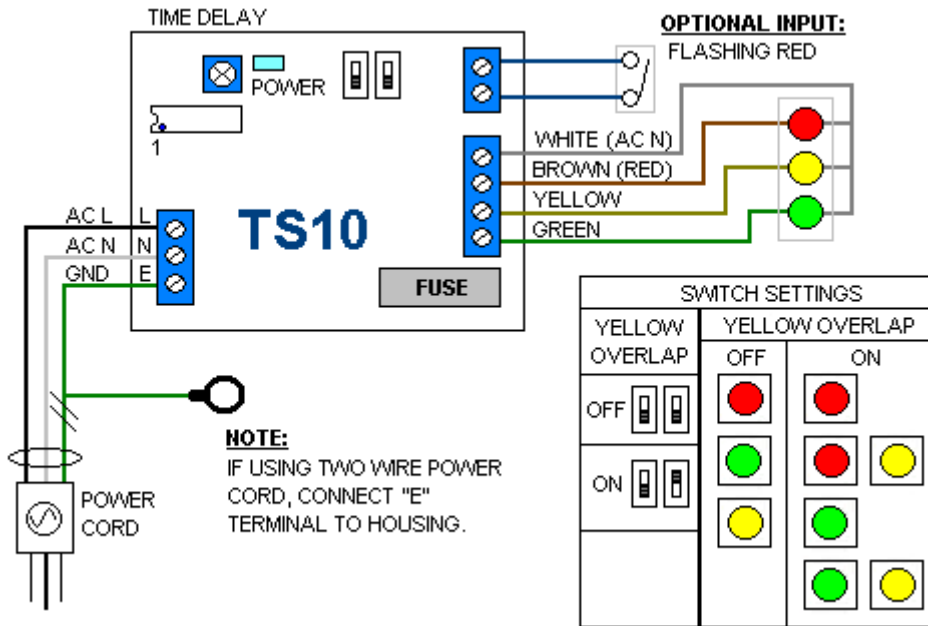
All TS10's manufactured between 1-1-2010 and 9-1-2011 that do not support the push button option, a firmware upgrade is available.

Warning!: SHOCK HAZARD! DO NOT HANDLE CONTROLLER WHILE POWERED ON.

Note: Reduced bulb wattage may be required when using "Overlap" functions / settings.

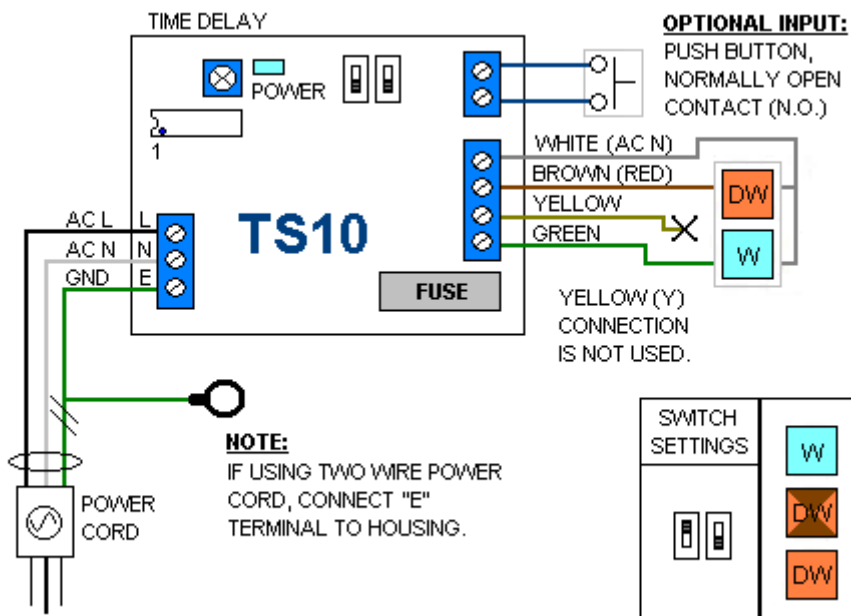
Application: TS10 - Single G,Y,R Signal

Caution! If you need assistance, please consult a qualified electrician.



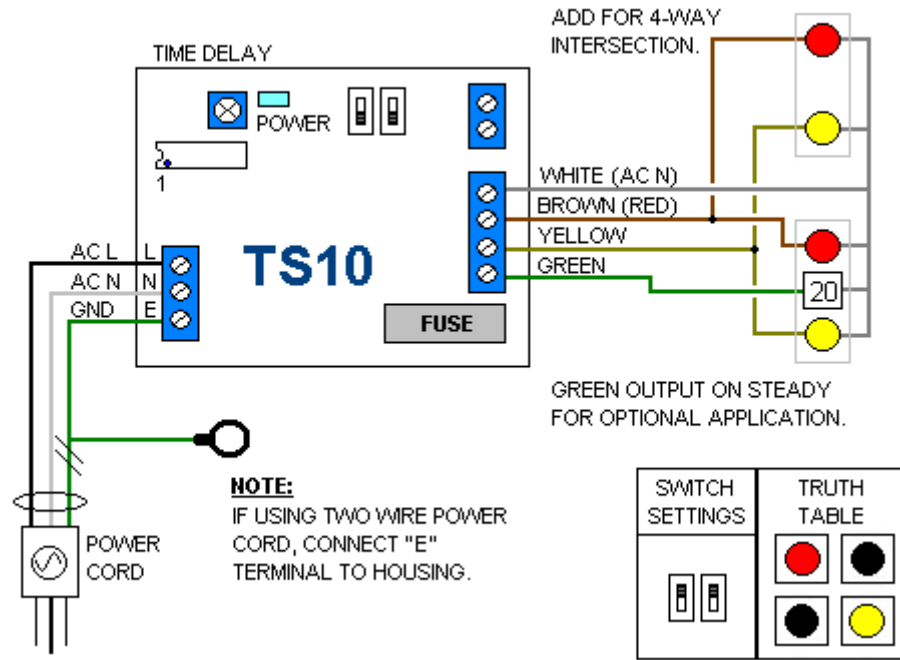
Warning! SHOCK HAZARD! DO NOT HANDLE CONTROLLER WHILE POWERED ON.

Application: TS10 - Pedestrian Crosswalk Signal



Application: TS10 School Zone w/ Lighted MPH, or 2/4-Way w/ Street Light

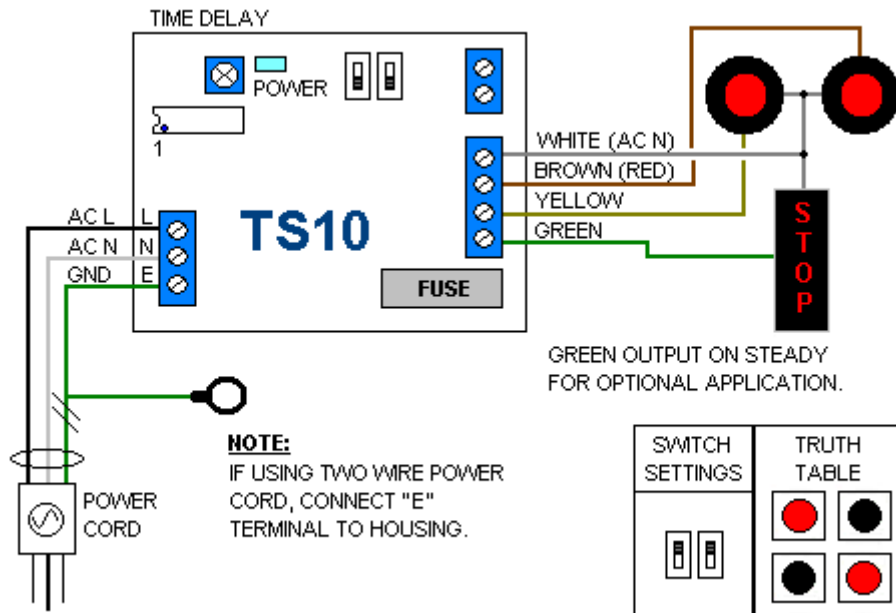
Caution! If you need assistance, please consult a qualified electrician.



Warning! SHOCK HAZARD! DO NOT HANDLE CONTROLLER WHILE POWERED ON.

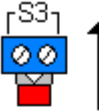
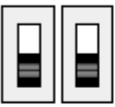


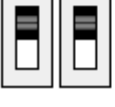
Application: TS10 RxR Crossing , or Caution Signal.

Caution! Railroad signals must be converted to operate on 120VAC.



CONTROLLER SWITCH SETTINGS

TS12 Switch Settings S1, S2, & S3 :

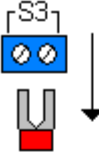





| | |
|---|---|
|  | <p>Install the red jumper at S3 to select from the following signal operations and corresponding switch settings. (<i>Factory Default</i>)</p> |
|  | <p>Standard G,Y,R, Signaling : (<i>Factory Default</i>) "Standard" Green, Yellow, Red signaling. Red / Red delay before signal interchange. Yellow remains a 5 second timing at any cycle time set point.</p> |
|  | <p>G,Y,R, Signaling w/ Yellow Overlap (U.K.) : Green, Yellow, Red signaling, with 2 second Yellow overlap on Red before Green. Also includes Red / Red delay and 5 second Yellow. (<i>Plessey Tin Lantern</i>)</p> |
|  | <p>G,Y,R, Signaling + 1 or 2 Arrows (Doghouse) : G,Y,R signaling with Green and/or Yellow Arrow. "Doghouse", Green + Green Arrow, Green + Yellow Arrow signaling, followed by G,Y,R signaling. Output R2 not used.</p> |
|  | <p>Flashing Yellow / Red (Don't Walk) : Toggles Yellow output (Y1) and Red output (R2) on/off. For flashing Yellow and flashing Red, or Don't Walk.</p> |

Warning! SHOCK HAZARD! DO NOT HANDLE CONTROLLER WHILE POWERED ON.

Note: Reduced bulb wattage may be required when using "Overlap" functions / settings.

CONTROLLER SWITCH SETTINGS

TS12 Switch Settings S1, S2, & S3 : (continued)

| | |
|---|--|
|  | <p>Remove the red jumper at S3 to select from the following signal operations and corresponding switch settings.</p> |
|  | <p>GYR+PED Signaling #1 : (Walk on Green) Output terminals N1,R1,Y1,G1 operate as "standard" G,Y,R signaling. Terminals N2,R2,G2 operate as standard crosswalk. Y2 is not used. Don't Walk - Flash 10x.</p> |
|  | <p>GYR+PED Signaling #2 : (Walk on Red) Output terminals N1,R1,Y1,G1 operate as "standard" G,Y,R signaling. Terminals N2,R2,G2 operate as standard crosswalk. Y2 is not used. Don't Walk - Flash 10x.</p> |
|  | <p>2x PED / Crosswalk Signaling : Output terminals N1,R1,G1 and N2,R2,G2 operate as crosswalk signaling, 2/4 way operation. Y1, & Y2, is not used.</p> |
|  | <p>Flashing Red / Red (Don't Walk) : Toggles Red output (R1) and Red output (R2) on/off. For flashing Red / Red, or Red / Don't Walk.</p> |
|  | <p>Optional Push Button Input - (Ped / Crosswalk Modes) : Starts "Walk" cycle during "Don't Walk" cycle (Steady). Optional push button, normally open contact (N.O.) can be added.</p> |



Push button option is standard on all current TS12's manufactured after 9-1-2011.

All TS12's manufactured between 11-1-2010 and 9-1-2011 that do not support the push button option, a firmware upgrade is available.

Warning!: SHOCK HAZARD! DO NOT HANDLE CONTROLLER WHILE POWERED ON.

Note: Reduced bulb wattage may be required when using "Overlap" functions / settings.

TS CONTROLS

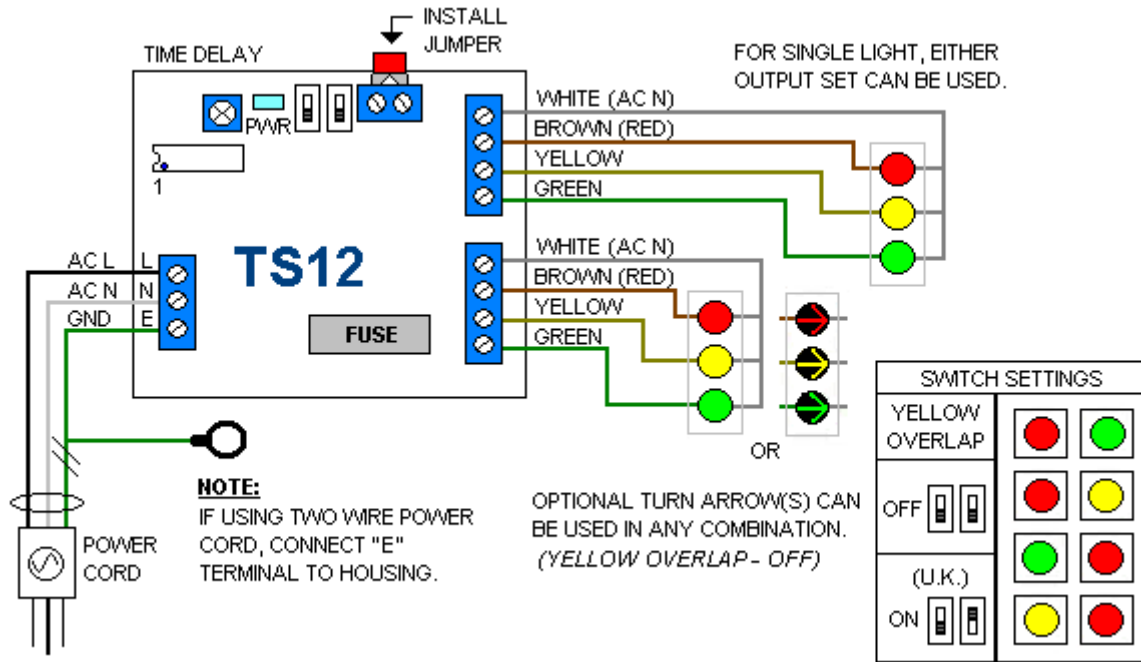
www.tscontrolsonline.com

Traffic Light Controls

Email: ts.controls@yahoo.com

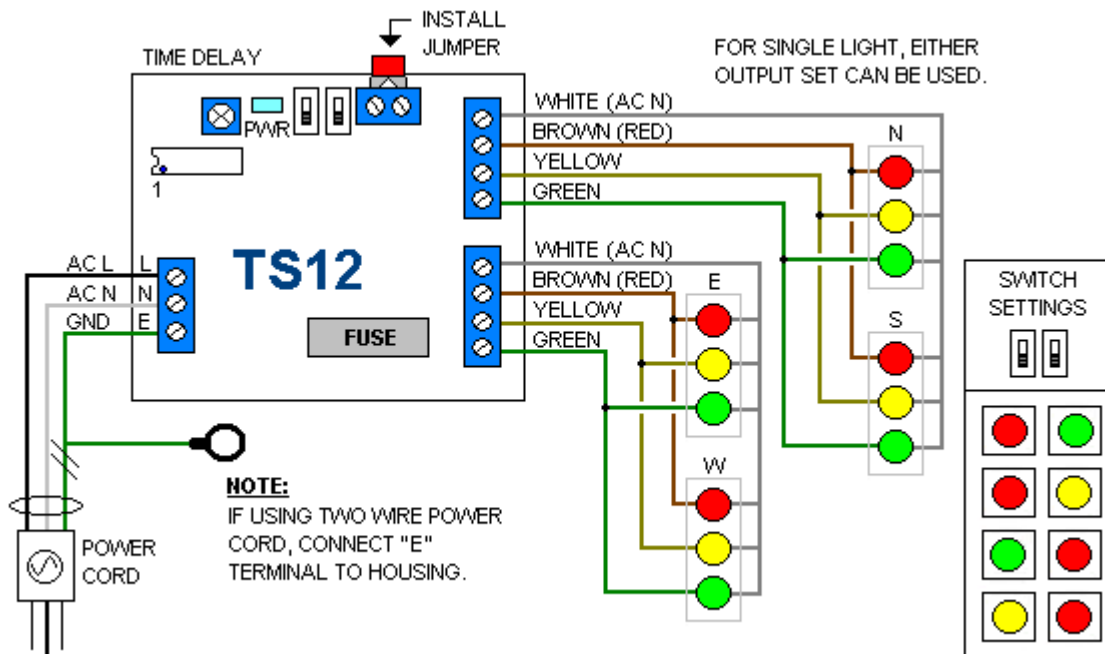
Application: TS12 - Dual G,Y,R Signals / 2-Way Signaling, or G,Y,R & Arrow(s)

Caution! If you need assistance, please consult a qualified electrician.



Warning! SHOCK HAZARD! DO NOT HANDLE CONTROLLER WHILE POWERED ON.

Application: TS12 - Quad G,Y,R Signals / 4-Way Signaling.



TS CONTROLS

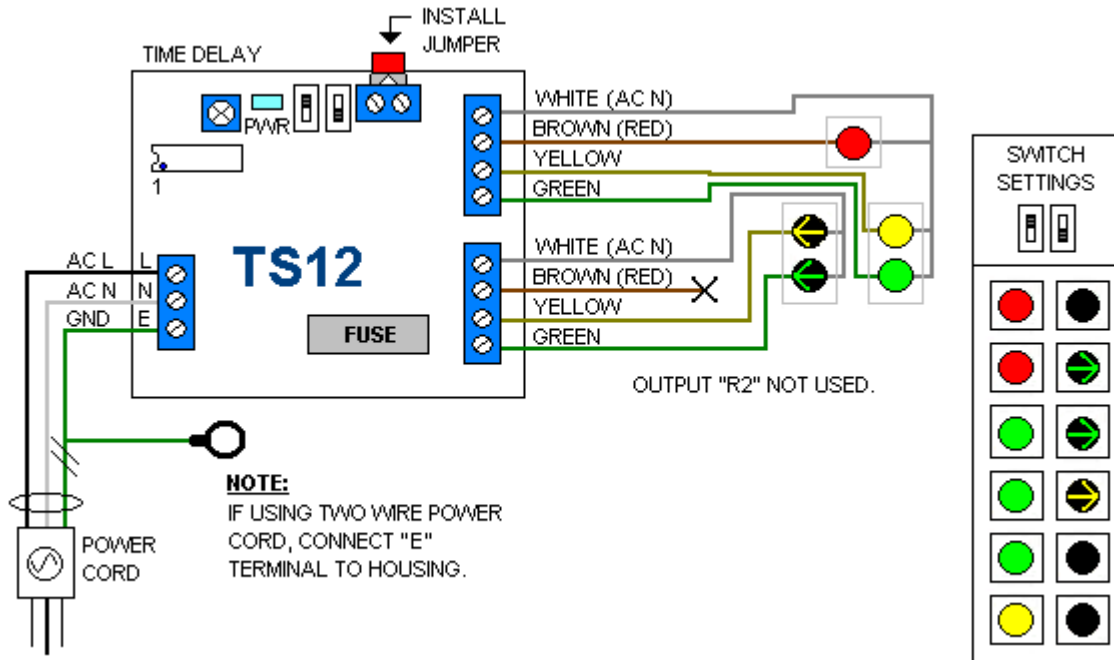
www.tscontrolsonline.com

Traffic Light Controls

Email: ts.controls@yahoo.com

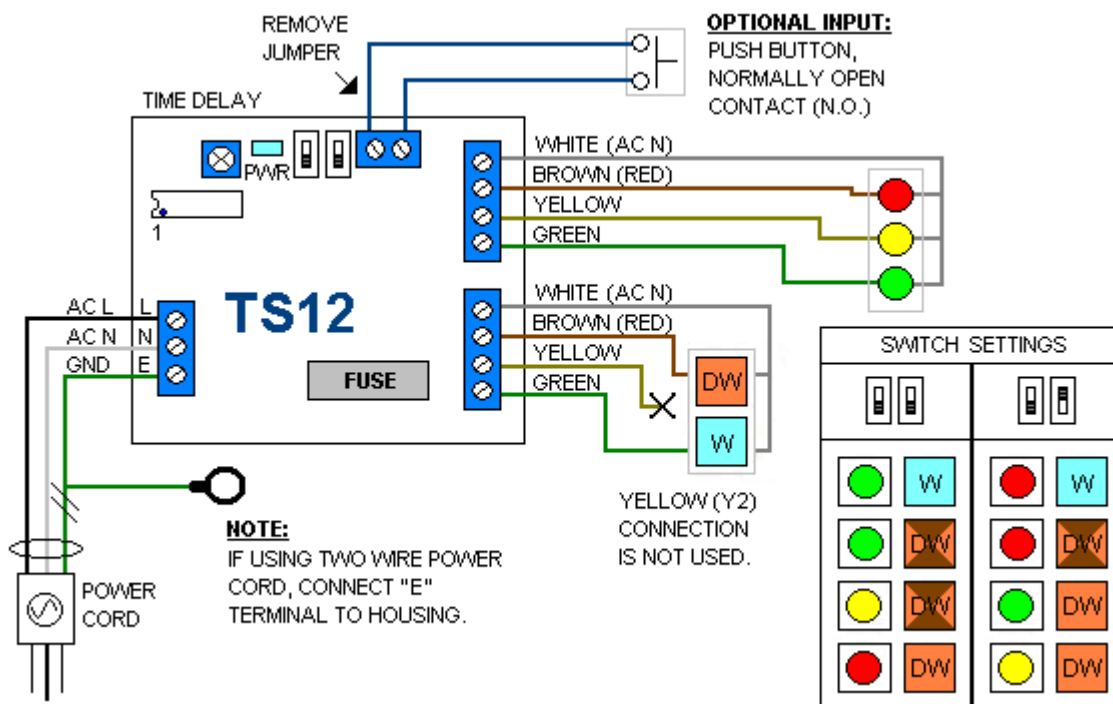
Application: TS12 "Doghouse" G,Y,R & 1, or 2 Arrow(s) - 4, or 5 Light

Caution! If you need assistance, please consult a qualified electrician.



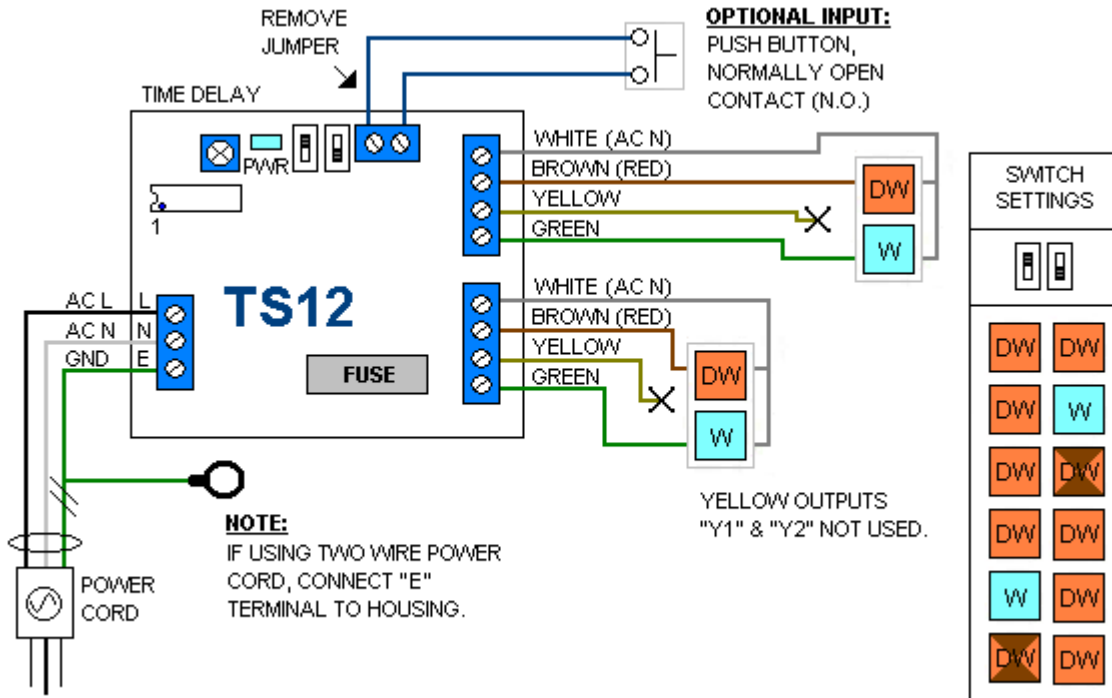
Warning! SHOCK HAZARD! DO NOT HANDLE CONTROLLER WHILE POWERED ON.

Application: TS12 Single G,Y,R Signal w/ Crosswalk



Application: TS12 Dual PED / Crosswalk Signals, 2/4 Way Signaling .

Caution! If you need assistance, please consult a qualified electrician.



Warning! SHOCK HAZARD! DO NOT HANDLE CONTROLLER WHILE POWERED ON.

SPECIFICATIONS: (QUICK REFERENCE)

Dimensions: Circuit Board Size
TS10 - 3" x 3"
TS12 - 3" x 3.5"

Wire Size: 16 - 22 AWG - Recommended

Input Power: 120VAC - Fused
TS10 - 2A Max.
TS12 - 3A Max.

Output Power: 120VAC / 150W Max. - Each Channel (^)

Time Adjustment:* Counter-Clockwise = Slow
Clockwise = Fast

***Note:** Time adjustment is single turn, similar to radio volume knob. Do not force beyond stopping points, as this will cause permanent damage.

^**Note:** Output power is compatible with both L.E.D. and incandescent lighting.
NOT RECOMMENDED FOR INDUCTIVE LOADS.

WARRANTY / RETURN FORM

MODEL: ___ TS10/T ___ TS12/P OTHER _____ PURCHASE DATE: _____
(Please Specify Model)

90 - DAY LIMITED WARRANTY

All TS series are warranted against manufacturing/workmanship defects for a period of 90 days from date of purchase. Any TS series controller that is used for other than the purpose intended, resulting in damage, personal or property, is the rightful owners responsibility. This warranty does not cover, improper installation /application, modification, misuse, abuse, power surge, brown outs, lightning strikes, and any other "act of god" resulting in damage, whether personal or property. TS series controllers are designed for indoor and private use only. And, are not intended for industrial / commercial, or municipality use.

Return Policy:

TS Series controls returned for refund, or repair, without proof of purchase will not be honored under warranty. TS series controls under warranty will be repaired/replaced, at the discretion of the manufacturer, as necessary. Any TS series control returned for repair after warranty period, "out of warranty" will be repaired at a flat rate cost of \$20, and will be warranted for a period of 30 days.

Mail / Remit to: Brent Anderson
 2725 Castleton Ave.
 Toledo, OH 43613
 Email: ts.controls@yahoo.com

Directions: Complete the requested information below.

Name: _____

Address: _____

City-State-Zip: _____

Phone#: (_____) _____

E-mail (optional): _____

Reason for return / description of failure / problem. (Please Check) Repair / Exchange _____ Refund _____
(See Return Policy)

