LOW VOLTAGE TRANSFORMER INSTALLATION GUIDE

THESE INSTRUCTIONS APPLY TO MODELS: TS-TSSP-150 and TS-TSSP-300

SAFETY:

This fixture must be installed in accordance with the National Electric Code and local code specifications. Failure to follow these codes and installation instructions will void the warranty and may result in serious injury and/or damage to the fixture. This product is designed for above ground installation only. Keep these instructions for future use.

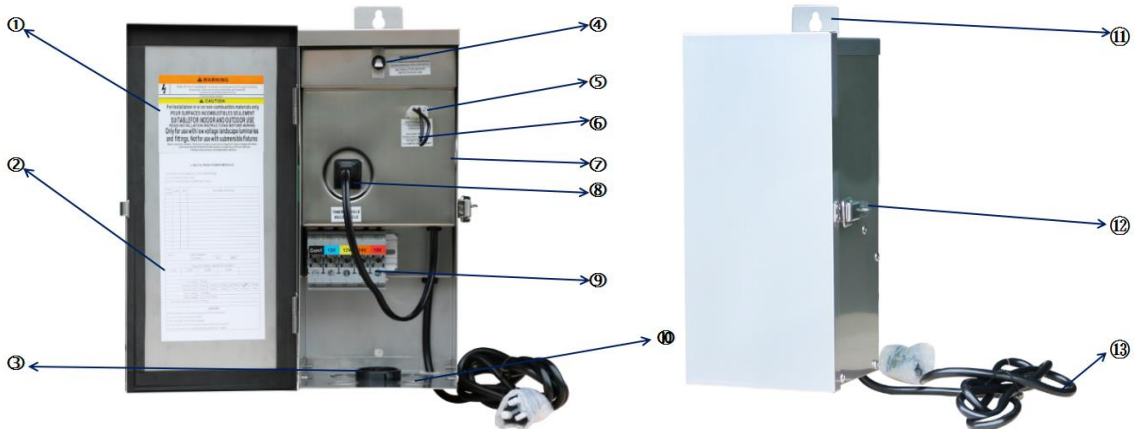
- **WARNING!** Risk of fire or electrical shock. Install the transformer at least 5 feet (1.5m) from pool or spa and at least 10 feet (3.05m) from a fountain.
- This transformer must be connected to GFCII-protected receptacle. If the receptacle is outdoors, then it must be protected by a weather-proof cover.
- All transformers are indoor and outdoor rated, but we recommend the transformer be mounted outdoors. If mounted indoors, then codes should be followed that apply to indoor wiring - especially for wires that pass through exterior walls.
- Transformer must be mounted in a vertical orientation with the bottom plate at least 1 foot from the ground.
- It is normal for the unit to become hot, do not allow contact with PVC or plastic sidings. In hot climates, avoid mounting in direct sunlight, but allow photocell to be exposed to sky. Near salt-water, protect unit by enclosing in weather-proof structure.

CIRCUIT BREAKER:

This product has a built in circuit breaker to help protect against electrical short circuits. This does not prevent the need to use GFCI outlets marked for “wet location.” It also does not prevent the requirement to follow all local and electrical building codes for the main circuit breaker protection.

If a circuit break occurs, immediately disconnect the transformer from the power source. Make all repairs to the lighting system that cause the circuit breaker to trip. Once the problem has been determined and fixed, reset the breaker by switching to the on position.

FEATURES AND CONTROLS:



①	Warning Label	⑧	Timer Receptacle
②	Operating Record	⑨	Terminal Block
③	Conduit Cover	⑩	Knockout
④	Overload Circuit Breaker	⑪	Mounting Tab
⑤	Photocell Plug	⑫	Lockable Latch
⑥	Testing Loop	⑬	Power Cord
⑦	Photocell Knockout		

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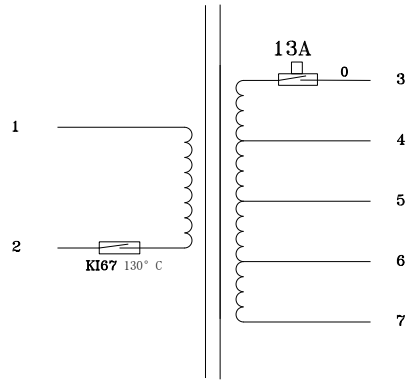
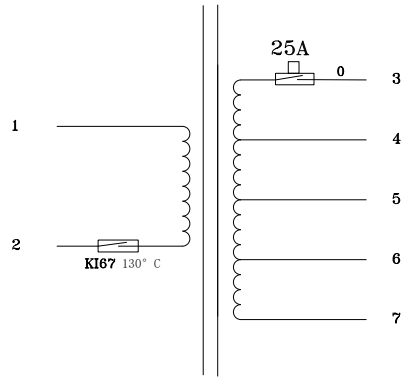
150W SCHEMATIC DIAGRAM



150W ELECTRICAL CHARACTERISTICS

Rated Input Voltage	120VAC 60Hz (1-2)			
Input Current (no loading)	100mA MAX At 120VAC / 60Hz Input(1-2)			
Output	Measuring Point	No-Load Voltage (V±5%)	Load Voltage (V±5%)	Load Current (A)
	3-4	11.97VAC	11.16VAC	12.5A
	3-5	13.1VAC	12.3VAC	11.5A
	3-6	13.9VAC	13.15VAC	10.7A
	3-7	14.8VAC	14VAC	10A
Overload Protection	13A			

300W SCHEMATIC DIAGRAM



300W ELECTRICAL CHARACTERISTICS

Rated Input Voltage	120VAC 60Hz (1-2)			
Input Current (no loading)	100mA MAX At 120VAC/60Hz Input(1-2)			
Output	Measuring Point	No-Load Voltage (V±5%)	Load Voltage (V±5%)	Load Current (A)
	3-4	12.2VAC	11.53VAC	25A
	3-5	13.1VAC	12.37VAC	23A
	3-6	13.9VAC	13.2VAC	21.4A
	3-7	14.8VAC	14VAC	20A
Overload Protection	25A or TWO13A			

150W and 300W COMMON ELECTRICAL CHARACTERISTICS

Insulation Resistance	Primary--Secondary 100MΩ Min (At DC 500V)
Dielectric Strength	AC 1000V 5mA 50Hz 60sec
Operating Ambient Temperature	-10~+50°C
Product Operating Temperature	90°C MAX
Waterproof Grade	IP65
Overload Protection	13A
Thermal Protection	130°C 5A

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MOUNTING TRANSFORMER:

Mount transformer to solid surface or stand using stainless steel screws and anchors (if needed) (hardware not included). Screws will pass through keyholes. Use bubble level to ensure vertical mounting. Bottom of transformer must be at least 1 foot above ground.

TRANSFORMER SIZING:

The total lamp VA (load) of all fixture connected to one transformer must not exceed 70% of the VA capacity of the transformer. Therefore, the transformer selections is primarily based on Total Fixture Load:

Total Fixture Load (Watts or VA) ÷ 0.7 = Min. Transformer Capacity

Example: Total fixture load is 200 watts, divide by 0.7 to equal 286 watts, a 300W transformer would be ideal.

SELECT YOUR WIRE:

We recommend using a minimum 14 AWG (12 AWG minimum is preferred with 300W) low voltage direct landscape wire. It is important to distribute fixtures evenly along the cable with higher wattage fixtures closer to the transformer it possible. Only use the bottom terminals for wiring to lighting. Do not loosen the top terminals. They are for internal wiring of the transformer.

The higher voltage terminals are for long wire runs to lights. These help account for voltage loss along long runs.

Voltage Loss Calculation (_____ X _____ X 2) ÷ _____ = _____
Distance (Ft.) Load (W) Cable Constant Voltage Loss

Wire Gauge	Cable Constant
#14/2	3500
#12/2	7500
#10/2	11920

SELECT VOLTAGE TAPS:

Transformer are Multi-Tap - giving you a selection of voltages for your wire run connections. Selecting a higher voltage at the transformer compensates for voltage that may be lost along wire runs.

INSTALLING A PHOTOCELL:

Instructions for Photocell are included with the photocell.

INSTALLING A CUSTOMER SUPPLIED TIMER:

Disconnect the source power from the transformer before installing the timer. Unplug the plug as shown below.

Insert that plug into the side of the customer supplied timer as shown.

Insert the timer into the outlet on the transformer as shown.

Follow the instructions for the timer to set the clock and on and off times or manually turn on/off your system.

CHECK THE SYSTEM:

After installing the entire low voltage system, operate the system for five minutes. On the low voltage side, all electrical connections spots should be cool to touch. If a connection is hot to the touch, re tighten the connection and check to ensure that the temperature decreases.

Place the transformer cover back and tighten all four provide screws on both sides.

For Questions & Support, please visit our website at www.tru-scapes.com