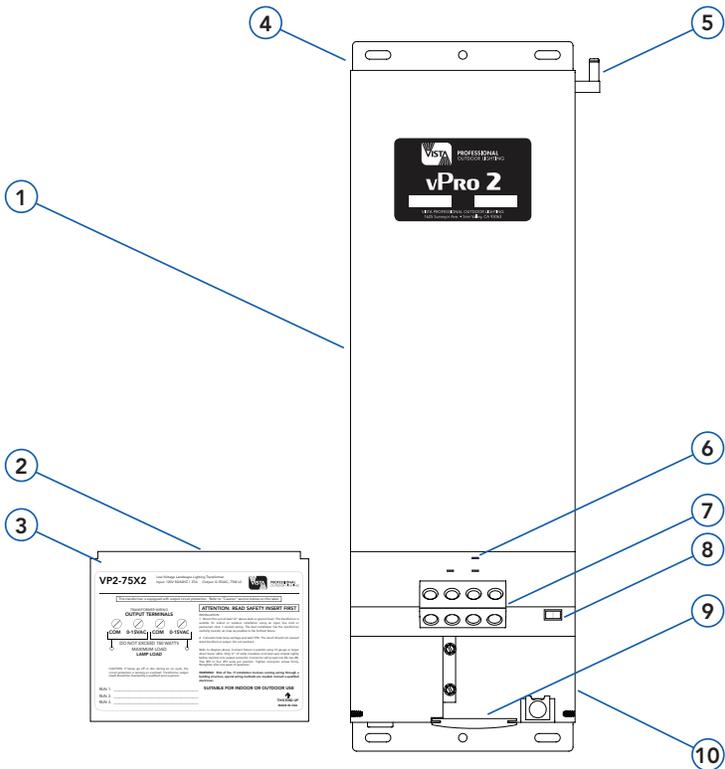


vPRO 2

POWER SUPPLY



1. Stainless Steel Cabinet

Type 304 Alloy, Mill finish.

2. Removable Front Panel

The door can be removed for greater access to wiring compartment during installation.

3. Operating Instructions inside door

Refer to these instructions for additional information on wiring to the transformer.

4. Mounting Flange

For mounting transformer to flat surfaces.

5. Extended range 2.4GHz external Bluetooth® antenna

For receiving Bluetooth® data over longer ranges

6. Input/Output power LED indicators

Indicators light when power is supplied to the transformer and when power is available at the terminals.

7. Terminal Strip

0 - 15 volts AC Low Voltage Connection.

8. Internal Override Switch

For manual transformer control.

9. Adjustable Cable Raceway Feeder (ACRF)

Adjustable cable raceway feeder easily accommodates multiple wire runs. Or use handy 1 3/4" conduit knockout.

10. 1/2" Knockouts

For conduit and accessory mounting.



LANDSCAPE LIGHTING

READ THIS FIRST!

COMPLETE CONTROL!

Congratulations! You have purchased a first in landscape lighting - the **Vista vPRO 2 Bluetooth LE controlled multi-circuit solid state transformer**. Your new transformer comes from the factory programmed for sunset to sunrise operation based on Pacific Standard Time. Wherever you are, follow these simple step-by-step instructions below to add any custom program for automatic control of your new lighting system.

DEVICE REQUIREMENTS

vPRO 2 requires an Apple or Android device that supports Bluetooth Low Energy (also called Bluetooth LE, BLE or Bluetooth 4.0). running iOS 7 or Android 4.4 or newer.

Supported devices:

Apple: iPad (Air, Mini, 3rd & 4th gen), iPhone (6, 6+, 5s, 5c, 5 & 4s), iPod touch (5th gen).

Android: You can find a list of supported Android devices here:

<http://www.bluetooth.com/Pages/Bluetooth-Smart-Devices-List.aspx>

INSTALLING THE vPRO 2 APP

Search the App Store (iOS) or Play Store (Android) for "Vista vPRO 2". Install on mobile device (free).



« You may scan this QR code with your mobile device to download as well.

INITIAL CONNECTION AND SETUP

Internal Override Switch must be set to 'App'

1. Make sure your vPRO 2 transformers and fixtures are properly mounted and fully wired (see MOUNTING INSTRUCTIONS). Apply 120V input power to only one transformer in the installation (if multiple). Your lights may flash as the transformer initializes. Open the **vPRO 2 App** on your device. When loading the App for the first time, make sure to answer **ALLOW** (prompt) to the question **USE YOUR LOCATION?** This will send and store the correct time to your transformer according to your device and location.
2. Stand close to the transformer and open your app. Via **Bluetooth 4.0** technology, you should see one or more locations appear. Each signal strength bar represents one single or dual circuit transformer. Tap on the top location to connect. In rare cases, multiple taps may be required.
3. For iOS, if provided, tap **A** or **B** (if multi-circuit) at the top of the screen. The circuit being set will highlight. For Android, tap the menu icon at upper right and select **A** or **B** (if multi-circuit). In order to easily identify fixture locations and transformers on a job, the circuit name may be

vPRO QUICK START GUIDE: iOS / Android

changed in settings, along with the name of each transformer.

4. The connected transformer name ('vPRO 2' from factory) will be displayed at the top of your screen. For **iOS** devices, tap on the **Control** tab at the bottom and tap **ON**. For **Android** devices, tap the **LIVE CONTROL** tab at the top of your screen, then tap the right side of the **Brightness** slider. Your fixtures will light.

During initial connection to your transformer, if you answered 'Dual Circuit' in the opening screen of the app, your fixtures will light according to the transformer circuit selected. When facing your transformer, **A** represents the left side terminal output, **B** the right side.

For one circuit transformers, select 'Single Circuit' in the opening screen of the app. Both pairs of output terminals are then controlled by the app. If 'Single' or 'Dual' was initially selected in error, the 'Erase Existing Programming' button at the bottom of the settings screen can be used to reset your transformer to factory defaults. Warning: Any saved programming will be erased!

5. If desired, the vPRO transformer can be renamed. Tap on the **Settings** tab. Scroll down to **Rename selected side** or **Rename transformer** and tap on it. Enter a new name for the location of the fixtures connected to this transformer circuit, e.g. "Front Yard". Save the new name for iOS by tapping **Done**. For Android, tap **OK**.

6. Under **OTHER SETTINGS**, choose your voltage **Output Level** as required, and **Lamp Type**. Separate lamp types are offered due to varying dimming performance when using LED's. When Halogen is selected for an LED string, unexpected dimming results may occur.

7. Turn the **Use DST** switch off or uncheck the box if you live in an area that does not observe Daylight Savings Time, such as Arizona or Hawaii.

If a second circuit is provided in this transformer, select Side **B** within the app and repeat the above process. With more than one transformer on the job, the process can be simplified by connecting 120V input to one transformer at a time.

LIVE CONTROL

You can control and check the function and brightness of your lights in real-time from the **Live Control** tab.

Brightness Lock

Normally when you disconnect or switch from a location, the lighting schedule for the disconnected location will run immediately. For example, if it is nighttime and you connect and turn the lights off and then disconnect, the lights should immediately turn on because they are programmed to be on at night. If you would rather the lights stay where you set them after you disconnect, use the **Brightness Lock** feature. You can keep the lights at the custom brightness you set for a period of time or

until the next event (scheduled program and/or brightness change).

SETTINGS

You can change the on/off/dim times of your lights from the **Settings** tab. The **BRIGHTNESS** control for **Lights On** refers to the initial brightness of your lights when they first turn on. **Note:** Dimming levels may vary if different lamp types are combined in the same circuit.

Darkness Periods

When **These Settings Apply** is set to **Nightly**, your lights will turn on/off/dim at the same times every night of the week. You can also select different darkness periods (a period of darkness beginning at noon of one day and ending at noon of the following day). For example, when **Tue/Wed** is selected for **These Settings Apply**, on/off/dim times you configure only apply to the Tue/Wed darkness period and other periods are unaffected. **Exactly at Sunrise** and **Exactly at Sunset** times automatically adjust according to the timezone of the last device connected. Be careful to correctly move the "AM" and "PM" scroll for each desired on/off/dim time.

Presets

After configuring your schedule settings the way you want, you can save them for later use by tapping the **Save Settings to Preset** button or **Presets** button. This will save your schedule settings (only on/off/dim times/brightness and nothing else) to your iOS or Android device so you can load a copy of those settings to other

READ THIS FIRST!

locations later with the **Load Preset** button. When multiple circuits are set for identical ON/OFF times, it is normal for the ON/OFF function to vary slightly between circuits in a transformer, or among transformers on a job.

If your transformer becomes disconnected from 120V input power for any reason, a backup battery within the transformer control module will maintain your programmed settings. The battery will not need service during the life of the unit.

OVERVIEW

Use overview to test your settings as needed. It is a sped up way to see how your lights will act during each night period. The **BRIGHTNESS** bar is only an indicator.

When satisfied with your entries, be sure to save Settings through **Save Settings & Disconnect** to run your settings nightly.

INTERNAL OVERRIDE SWITCH

You will find a three position rocker switch inside the transformer cover next to the output terminals. It can be set according to the legend below. Your transformer comes from the factory in the APP position. On dual circuit transformers, the switch controls both circuits at once.

ALL ON	ALL OFF	APP
left position	center position	right position

MOUNTING INSTRUCTIONS

WARNING: Transformers must be installed in accordance with the National Electrical Code (NEC) and local codes. Failure to do so will void the warranty and may result in serious injury and/or damage to the transformer.

1. Find a suitable, flat-surfaced location to mount transformer, taking in to consideration proximity to 120 volt AC power source.
2. Mount this unit at least 12" above deck or ground level. This transformer is suitable for indoor or outdoor installation using an input line cord or permanent class 1 conduit wiring. The best installation has the transformer centrally located, as close as possible to the furthest fixture.
3. Mark location of mounting holes using the transformer's mounting flange as a template.
4. Center punch and drill (with an appropriate bit size for the screws to be used) on the marks on the location's surface.

5. Using appropriate screws for the selected mounting surface, insert screws through mounting flange into predrilled holes. Make sure screws are of a load bearing quality.

TRANSFORMER SIZING

Low voltage lighting systems require the use of a transformer to reduce the standard 120 volt power from ordinary household electricity to the 12 volt needed to power low voltage lamps. Transformers vary in size or capacity. The total lamp wattage (load) of all fixtures connected to one transformer must not exceed the wattage capacity of the transformer. Therefore, to determine the transformer size needed, simply add up the wattage of all lamps you plan to use +10% for cable & connection factor. (Low voltage cable and fixture connections add hidden watts to your system.)

TRANSFORMER SIZE = TOTAL FIXTURE WATTS x 1.1

TIP: All low voltage connections must be tight and waterproof.

Select a transformer that matches as closely as

possible your total lamp wattage. For example: if you have 12 fixtures all rated at 10 watts, you will need a 150-watt transformer (12 x 10 = 120 watts plus 10% = 132). If your total wattage is too great, either divide the total load between two transformers or use a more powerful model. Selecting a transformer with about 20% higher capacity than your total lamp wattage will allow for adding a fixture or two later.

LOW VOLTAGE CABLE LENGTH

In planning a low voltage system, it is necessary to consider the impact of voltage drop. Because of cable's inherent resistance, voltage drops along its length: the end-of-run lamps will be dimmer than those at the beginning. Since voltage drop is a function of cable length and cable size and total fixture wattage, voltage drop can be minimized in several different ways:

- Use multiple cable runs
- Use heavier gauge cable (8 or 10 gauge)
- Shorten cable lengths or runs
- Reduce wattage of individual fixtures
- Reduce the total number of fixtures on a run
- Use multiple transformers in different locations

Cable is measured by gauge. The lower the number, the thicker the cable and the more current it carries. Cable for low voltage lighting is available in three gauges: #12-2, #10-2, and #8-2. As noted, #8-2 gauge is the largest and is capable of carrying the most current.

Refer to the Cable Length Guide below to estimate the maximum allowable cable length that will keep the farthest fixture from the transformer from becoming to dim (below 10.5 volts). In addition, your transformer's output options, the design of your lighting system and corresponding cable layout can help minimize voltage drop

(see 12-Volt Cable Layout Options, Output Adjustment Switch, and Multi-Tap Installation sections).

TIP: Expect a voltage drop of greater than 1.5 volts when cable length is longer than recommended. Use the formula below to calculate maximum cable length.

$$Vd = \frac{L \times W \times 2}{Kc}$$

Vd = Voltage drop in the section of cable, in volts.
L = Length of the section of cable (one way distance), in feet.

W = Total Watts carried by the section of cable for the lamps it supplies.

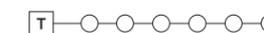
Kc = 'Cable Constant', as follows:

Cable Size (AWG)	K _c
12	7500
10	11920
8	18960

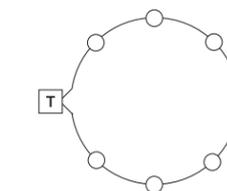
LOW VOLTAGE CABLE LAYOUT OPTIONS:

TIP: Connect all lamps in parallel. EXAMPLE: Connect one side of each lamp to 'COM' terminal, the other side to '12V' terminal.

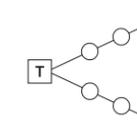
1. Straight run installation: Fixtures run in sequence directly from the transformer.



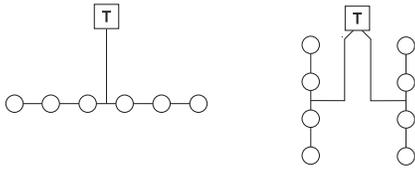
2. Loop installation: Fixtures are arranged in a looped circuit, reducing the effects of voltage drop.



3. Split load installation or multiple cable run: Fixtures run in two or more directions from the transformer. Locating the transformer in the center of the run reduces the effects of voltage drop.



4. "T" installation (RECOMMENDED): Allows more equal distribution of power to the center of the run, or to a run some distance away. Cable running from the transformer must be of a heavier gauge (#8 or #10).



CABLE CONNECTION DETAIL

TIP: For proper connection, strip off 3/4" of cable installation, twist wire strands tightly and use a high quality straight blade screwdriver 3/16" wide tip to tighten all screw terminals firmly.

ADJUSTABLE CABLE RACEWAY FEEDER (ACRF)

Vista Exclusive - Easiest in the industry to wire: adjustable cable raceway feeder easily accommodates multiple wire runs. Or use handy 1 3/4" conduit knockout.

TROUBLESHOOTING YOUR vPRO 2 TRANSFORMER

Although low voltage lighting systems operate with a minimum of maintenance, occasionally some problems will occur. Here are solutions to some of the most common problems.

TRANSFORMER INPUT/OUTPUT

1. Connect transformer to 120V source. Ensure the RED POWER LED inside the transformer near output terminal is lit.
2. With low voltage fixtures disconnected, test transformer output by switching 3-position switch to ON. Green LED(s) should light. Return switch to APP or Bluetooth connected operation.

If the previous steps test OK, in most cases, your transformer is working properly. If problems persist, continue with the following steps.

BLUETOOTH CONTROL AND SETTINGS

1. Ensure 3-position switch is in the APP position. When connected through the app, ensure transformer's internal green LED(s) light when control 'ON' is selected for either circuit.
2. Try the app with a different smartphone/tablet. If you are having issues with Android, try an iOS device, and visa-versa, to see if you get better results. We want to isolate transformer issues by eliminating the connection device.
3. Make sure your vPRO app and device operating system software is the latest version from the App Store/Google Play Store. When in doubt, you can always delete and re-install the app. When using iOS, go to SETTINGS, iTunes & App Stores and always enable 'Updates' under the AUTOMATIC DOWNLOADS section. Android devices should update automatically - no action necessary.
4. Try unplugging the transformer, waiting a few seconds, and plugging it back in.
5. Turn your smartphone/tablet completely off and back on again (reboot). This can fix certain Bluetooth® related and app settings issues.
6. Try the Erase Existing Programming button at the bottom of the settings screen in the app.

Important Notes and Latest vPRO Control updates:

MEMORY – All changes made to your vPRO transformer settings, when saved, become permanent (non-volatile) part of memory inside the transformer. In the event of a power outage, settings do not get erased. Changes to settings are only possible with connection via the app.

AUTO PLAY – The Auto Play demo in the app only works on one side of a dual circuit vPRO at a time, not both. When on the overview screen and either running through the schedule with the Auto Play button or by scrubbing through manually, the Brightness bar applies only to the side that is selected up at the top. The same applies to the lamps connected to the transformer: only the lamps connected to the side that is selected at the top of the screen will update their brightness as the sliders move around. The other side that is NOT selected will remain frozen where ever it was when it became unselected. You can switch back and forth between the two sides while auto play is running.

CLOCK ACCURACY – The 'Timezone' section under the settings in the app displays your current timezone. This allows you to verify that the location services are turned on for your device and that your location is correct. If your device asks, always answer 'allow' to the question 'use current location?'. Location data is required for your transformer to calculate sunrise and sunset times. Regardless of whether the transformer's internal RTC (real-time clock) is working or there is an error, the local time used by the transformer firmware will always be correct either until there is significant drift in accuracy over time or there is a 120v power outage. In the event of a power outage, the transformer's RTC time will be maintained via transformer's internal battery. When power is restored, vPRO time will be corrected by RTC time. The firmware is set to synchronize with the external RTC once per week, or, when connected to the app, the time will be updated automatically from the connected device.

If you have a concern or problem with any Vista product, first contact your local distributor. For continuing or unresolved problems, contact factory technical department at (800) 766-8478 between 8:00am and 5:30pm PST, Monday through Friday.

VISTA PROFESSIONAL OUTDOOR LIGHTING

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For technical information and product updates visit the vPRO 2 Transformer page at VistaPro.com

