

The PS1 consists of a SanDevices E682 pixel controller and a power supply mounted in a weatherproof enclosure, suitable for outdoor use. Most configurations include short cables “pigtailed” with waterproof female connectors, as attachment points for up to 16 strings or strips of pixels.

If desired, the cover may be removed by opening it fully, and snapping apart the hinges. The cover should be installed and closed during operation, and whenever AC voltage is connected.

Please refer to the E682 Pixel Controller User’s Guide for detailed information on the use and programming of the E682 pixel controller.

#### Mounting:

The PS1, if exposed to precipitation, should be mounted vertically, with the cable entry points at the bottom, to allow draining of any moisture accumulation. 3 screws are provided to allow mounting the enclosure to a vertical wall or post. Allow sufficient clearance below the PS1 for cable connections. It is preferred to mount the PS1 high enough that the male/female pixel cable connections will be raised off of the ground.

#### User Connections:

The PS1 requires AC power. When used outdoors the PS1 should ALWAYS be powered from a ground fault protected receptacle. The included power cord is rated for outdoor use. Allow 3 to 4 amps of 120VAC power per PS1 although average power consumption is usually much less. The PS1, as shipped, is wired for 120V AC. The unit can be run from 240 VAC if the power plug is replaced and the selector switch on the power supply is placed in the “230” position.

An Ethernet cable (user supplied) should be run through one of the unused cable ports in the bottom of the PS1 and connected to the Ethernet jack at the upper right. Secure the Ethernet cable either inside or outside of the PS2 to prevent damage to the Ethernet jack if the cable is accidentally pulled.

Pixel strings, with appropriate male connectors, plug into the 16 short female cables exiting the bottom of the PS2. 4-conductor cables are supplied, for compatibility with all pixel types. If ordering pixels from Ray Wu with cables pre-attached, please specify “18 gauge black 4-core waterproof cables with male connectors compatible with SanDevices pixel controllers”.

The color code for pixel connections is: RED=+V, GREEN=DATA, BLUE=CLOCK (if used) and BLACK=GROUND. Pixel connection cables are numbered from 1 to 16. These cables exit the PS2 enclosure in groups of four, with cables 1-4 to the left, and 13-16 to the right. If you are making your own pixel cables, it is important to verify the correct color code for your pixel strings. Since there is no standard it is best to contact the pixel vendor.

The cable runs from the PS1 to the pixels may be extended by adding one or more 4-core male/female extension cables inline. The maximum acceptable distance from PS1 to pixels can vary, but try to plan the installation so that these runs can be as short as possible. Less than 20 feet should not be an issue, and it’s often possible to go 60 feet or more, depending on the type and voltage of pixels.

## Power Supply:

The PS2 is supplied with either a 5V or 12V power supply, rated at 350 watts. The power supply voltage MUST match the pixel voltage. Voltage is indicated on the sticker on the inside of the door. You must NEVER connect 5 volt pixels to a 12 volt system, as the pixels will be destroyed.

Since the PS2 is essentially a closed system, with minimal air exchange, the power supply can become quite warm during operation, especially if pixels are left on full brightness white. The power supply is equipped with a fan that circulates air within the enclosure, to keep air temperatures inside of the enclosure even, and the enclosure itself serves to radiate heat to the outside. The system has been tested in up to 100 degree F ambient temperatures, but to keep operating temperatures of the controller and power supply reasonably low, it is not recommended that the PS1 be used in direct sunlight in high ambient temperature environments, with a heavy load on the power supply. Typical pixel operation consumes relatively little power, the worst-case situation would be to leave all pixels on full intensity white.

Note: Some power supply models run the fan continuously, others cycle the fan on and off as needed.

## Power LEDs:

During normal operation all 3 yellow LEDs on the E682 and the LED on the power supply should be lit. If none are lit it would indicate either a failure of the power supply, or that AC power is not present. If only the right-hand yellow LED is not lit it is most likely due to a blown 2A fuse. This fuse is usually grey in color and is located at the lower-left corner of the E682 circuit board.

Each of the 16 pixel string outputs is protected by its own 5A fuse. These fuses are of the common "mini-ATO" style used in automobiles, and replacements can be obtained from any vendor that carries auto parts.