Significance of part Numbers

Neon Transformers

Example of part number:

P 15 30 B PX 120

P High Power Factor Transformer. no "P" means Normal Power' Factor.

15 Represents the secondary voltage in thousands.

30 Represents secondary current in mA.

B Indicates transformer case. Other styles available are:

"C" - Low profile, standard heavy duty outdoor.

"EK" - Housing style (top load).

"EKF" - Housing style with junction box.

"F" - Self contained "Unitran™".

"H" - Hanger style.

120 Designates the primary voltage.

PX Represents the version of protected style transformers with secondary circuit ground fault protection

---

Pow-R-Pak Neon Power Supply

Example of part number:

SS 12 35 I C H

SS Stands for solid state, indicating it is an electronic power supply.

12 Maximum secondary output voltage in thousands (kV).

35 mA, secondary current.

H High light output

C Cord and plug.

I stands for Indoor. Also available in: **O** Outdoor.

Transformer Application Data

The following is a guideline for you to achieve a long, safe, and trouble-free life for a sign or decorative lighting

How to Choose the Proper Transformer:

All electrical devices are designed for a given range of operating conditions. Use of the device outside of its intended range may shorten its life expectancy. The selection of the correct transformer is a two-step procedure:

1.- Sizing the transformer based on physical requirements of the tubing to be energized. (use ANSI chart)

2.- Confirming (by electrical measurements) whether this selection should be modified.

Allanson transformers are designed to operate the maximum tube lengths as shown on the ANSI Tube Footage Chart. Each pair of electrodes must be considered as one foot of length. Sharp bends must be considered as extra length and footage recommendations must not be exceeded. Long runs of high-voltage cables must also be considered as load.

Neon transformers are designed to operate tubing at approximately 80% of the stated current rating on the label. For trouble-free operation, the tubing on each transformer should operate without flicker at 78% of rated voltage (ie. 94 Volts at nominal line voltage of 120V). Load verification by measuring the secondary voltage of the transformer while under primary actual load conditions is the best way to test a transformer. Instructions for using this method follow. Our Selektor™ is designed to measure your neon transformer load.

Reliability of the Luminous Tube Transformer:

Overloading neon transformers may significantly affect their life expectancy.

Heat: Transformers generate heat under normal operation and it is necessary to allow the heat to be dissipated. We recommend:

* Use of self-enclosed transformers.
* If transformer boxes are used, they must be well ventilated and painted white inside and out.
* Mount the transformer securely to the metal bottom of the box with one or more surfaces directly against the sides of the enclosure to provide means of transferring heat out through the walls of the enclosure
* Place transformer/box in an area with good airflow for proper installation.
* Do not install more than one transformer per transformer box. Always mount transformers in clean and dry locations.

Moisture:

High-voltage and water are a bad combination. All design elements should be considered to avoid moisture penetration. * For exterior damp and/or wet locations, a watertight enclosure is required. 1- Enclosure should be of proper size to accommodate the unit, and allow heat dissipation. The recommended enclosure sign is three times the volume of the transformer (CEC). 2- Enclosure should be painted inside and out to facilitate heat dissipation. Enclosures with a metalic finish are poor heat radiators.

Supply voltage

Low supply voltage will cause overloading of the transformer and will result in flickering in cold weather. High supply voltage can cause overheating of the transformer. The supply voltage shall be ideally within 3% of the rating shown on the transformer label. Please refer to the Supply Voltage table for correct wire size.

High voltage cables

Avoid long lengths of high voltage cable GTO from the transformer to the tubing. This reduces the load capacitance eliminating high peak voltages that are harmful to the insulation of the transformer. Do not run more than a total of 20 feet (6 meters) of high voltage cable in any metal conduit or raceway to the tubing. Do not run more than one high voltage cable in a single conduit. Maintain high voltage cables well separated from each other. The sign and transformer should be properly grounded and installed in accordance with the appropriate Electrical Code. (CEC, NEC)

Secondary voltage

Unlike a Milli-Amp reading which can be adversely affected by capacitance, a secondary voltage check takes all factors into consideration and gives you an accurate reading of how well your neon transformer is loaded.

Neon transformers are designed to run at approximately 1/2 their rated open circuit voltage; therefore, a properly loaded 15,000 volt transformer should be operating at 7500 volts total, or 3750 volts per leg. To take this reading you will need a True RMS Digital Multi-Meter and a High Voltage Probe. You can take this reading without having to disconnect any wiring. You simply connect the ground clip from your probe to your transformer ground lug and then you only need to touch the probe to the transformers secondary connections.

If the test reveals voltage higher than the optimum operating range, carefully check installation for problems, and/or increase the transformer size to meet the requirements.

If the test reveals voltage lower than optimum operating range, decrease transformer size accordingly.

In outdoor applications with mercury tubes, the transformer should be loaded so that the tube voltage is not greater than 40% of the rating. For example, a 15,000 Volt outdoor transformer properly loaded with mercury tubing should have a voltage not greater than 3,000 Volts per leg, 6,000 Volts total.