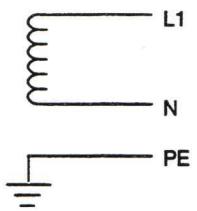
Special Installation Instructions for Floating Neutral (IT) Systems

When this power supply is installed in a system where the Neutral line is **not** referenced to Protective Earth Ground, these special installation instructions must be followed to prevent damage to the power supply.

Definition of Floating Neutral Systems

As described in this data sheet a *Floating Neutral System* is a system of power distribution wiring where Neutral and Protective Earth Ground are **not** tied together by a negligible impedance. In Europe this is referred to as an IT system (see IEC950). In a *Floating Neutral System,* voltages measured from input terminals to protective earth ground may exceed 264 Volts AC maximum input voltage as specified in the power supply specifications in this data sheet.

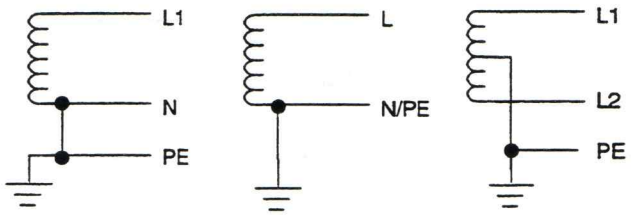
Example of Floating Neutral System



This system **must** be installed using the special installation instructions on this page.

Systems in which one leg of the power distribution wiring is tied to Protective Earth or a tap between two legs of the power distribution wiring is tied to Protective Earth are **not** *Floating Neutral Systems.*

Examples of Non-Floating Neutral System



These systems **do not** require these special installation instructions.

Use These Special Installation Instructions for Floating Neutral Systems

1. The input power terminals should be wired according to the instructions in this data sheet.
2. The factory installed jumper between terminals 3 and 4 of the power supply module **must** be removed.
3. Voltage surge protection devices, such as MOVs, **MUST** be installed between the following terminals:
   - From L1 to earth ground
   - From L2 (Neutral) to earth ground

The voltage surge devices must be rated such that the system is protected from power line transients that exceed *Line voltage + 100V +*$(N-PE)_{MAX}$.

For example, in a 240 Volt AC system with neutral floating 50V above earth ground, the transient protection should be rated at:

240V + 100V +50V = 390V