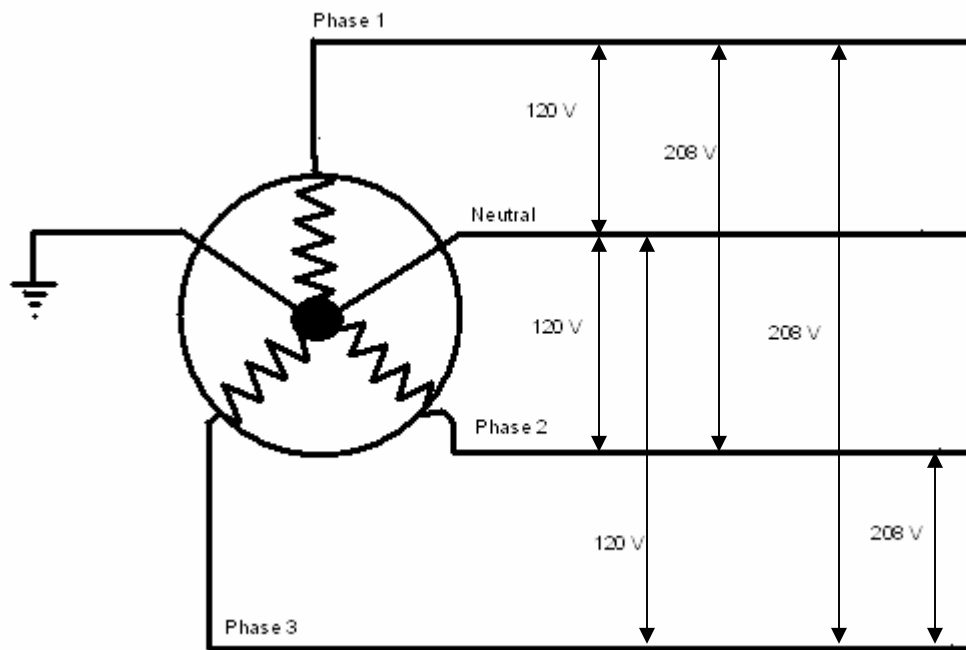


Three-phase systems provide smoother power than single systems. In addition, most three-phase equipment requires less space than single-phase equipment of the same rating. Three-phase equipment is more efficient and less expensive. Transmission of three-phase power requires less conductor material than single-phase power, and single-phase circuits can be tapped from three phase systems.

Throughout the world, utility companies commonly supply AC power at nominal frequencies of 50 or 60 Hz, with voltage ranges of 100 to 480. Although deviations from these norms are to be expected, they can sometimes be large enough to cause glitches in the operation of electrical equipment. If you are in doubt, about your voltage system call a qualified electrician or ask your electrical supplier. Always check for proper line voltage before installing any equipment.

With the three-phase wye system, most common, the phase voltage is the voltage between any one of the phase conductors and the neutral conductor. The voltage between any two-phase conductors is called the line voltage (VL). Two values of voltage are available for single-phase equipment: the voltage between the neutral and any one of the phase conductors, and the voltage between any two-phase conductors. For a wye connection, the line voltage (Phase 1, 2, 3) is always 1.73 (the square root of 3) times as much as the phase voltage ( $120\text{V} \times 1.73 = 208\text{V}$ ). All three-phase conductors are used to supply three phase circuits.



When checking for proper voltage requirements use this example for a guide.

Ground to L1 120 volts

Ground to L2 120 volts

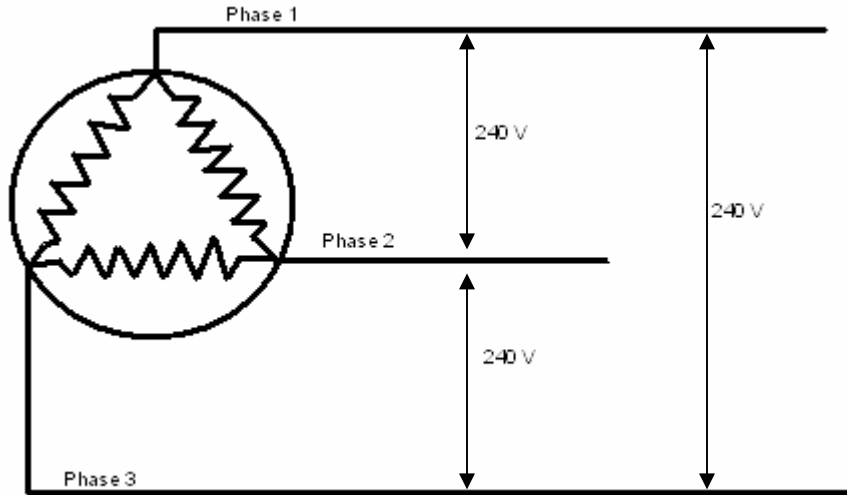
Ground to L3 120 volts

Phase 1 to Phase 2 208 volts

Phase 2 to Phase 3 208 volts

Phase 3 to Phase 1 208 volts

With three-phase delta systems, phase voltage (VP) is voltage between any two of the phase conductors. Single-phase equipment can be supplied by using any two of the three conductors. For three-phase equipment, all three conductors are used. The delta system, therefore, supplies the same value of voltage for a single phase and three phase circuits.



If you have problems in a delta or wye circuit, please note the voltages of each phase. It is suggested the highest phase not be used for any of the control circuit. Please move the highest phase to another input on the machine. L1 is recommended for most Minipack circuits but may vary.