

208 Volt, 3 Phase Power Supply and Pump Motors

This letter is intended to address the common request for motors on 208V, 3 Phase power supply installations. A 208-230/460 Volt motor has two windings – one for Low Voltage (208-230V) and one for High Voltage (460V), each with a 10% swing. So $230V - 10\% = 207V$ low range. In applications where the site voltage is solid year round at 208V and up, a 208-230/460V motor should have a normal life expectancy. On applications where the site voltage can vary down below 208V for much of the time, the motor will draw higher amperage and can expect to have a lower life expectancy. Voltage and Amperage have an inverse relationship - the lower the voltage, the higher the amps; the higher the voltage, the lower the amps.

Understanding the site power supply and varying voltage is critical to life expectancy in motors. It is critical to know the true measured site voltage and not simply rely on the data on the drawings. Particularly important is to know the possible lag or drop in voltage during heavy power load times, such as the summer time when A/C loads are higher in the area. This additional draw on a power grid system can lower the voltage to the equipment, thus raise the amperage and in the particular case, cause motors to run hotter and/or draw higher amps.

On power supply system's where the voltage is not steady at 208V or higher, it is recommended to utilize a true 200V motor. A motor wound for 200V usage can operate more effectively in a power system that has varying voltages between 190V-208V. Since 200V & 208V power systems are not as common in commercial applications as compared to 230V and 460V systems, the 200V wound motors are not typically off-the-shelf or stock type motors, as are the 208-230/460V motors. This is particularly true with JM Frame, close coupled pump motors. Should your installation require a 200V wound motor, expect a slightly higher price for the motor and additional lead times.

Thanks for your considerations. Please let us know if we can assist further.

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