

Overview

All HOMA submersible pump motors are designed with a 1.15 service factor and recommended operation within the voltage tolerance of +5/-10%. This creates an allowable voltage range of 207 volts to 241 volts on a 230V winding. As such, all single and three phase 230V HOMA motors are useable on true 208V service.

208V service is a common single and three-phase site voltage for pump stations, often found in light to medium commercial areas. The three phase is a fully symmetric distributed power source and the single phase is produced between any two conductors of the three-phase 120/208V Wye power transformer. Both power sources are considered stable and provide consistently suitable power for a 230V motor.

Single Phase

For single phase installations, HOMA supplies a start kit consisting of the necessary start & run capacitors along with a start relay. These kits are optimized for a 230V supply and in most cases will work successfully on a 208V supply, however if any reliability issues are noted such as relay chatter, capacitor service life or improperly loaded motor conductors, these components may require adjustments for proper operation. Refer to the start-up instructions found in the single-phase motor booklet (Single Phase Pump Capacitor Sizing Procedure: HOMA Document 88LM2017) for more details.

Cautions

On some heavily loaded 230V systems, the line voltage may drop into the low 200 volt range and may be referred to as a 208V system. However, this is not a true 208V service and will not necessarily provide a stable power supply to the motor. Voltage instability in these systems often occurs throughout the day as loading varies. If it is found that voltage falls outside of the allowable range, performance issues may occur that can affect the lifespan of the pump motor. A common fix for this is the installation of a buck-boost transformer. If installing a transformer is not possible, a HOMA motor may be nameplated for 208V operation with a limitation on duty cycle. This is referred to as "S3" or "intermittent" operation, and the duty cycle limitation is shown on the nameplate.

The standard HOMA technical information and pump name plates include information for operation at 230V. It is important to note that both the inrush current (aka Starting Current or Locked Rotor Current) and running amps (aka Full Load Amps or FLA) increase when operating on 208V service. Please be sure to request these adjusted values from your local HOMA representative.

For further assistance, please contact our Technical Department at 203-736-8890