

Single-Phase Motor Serves Loads Up To 100 Hp

When planning new electric installations like irrigation systems, grain bins or other motor-driven equipment placed in remote locations, the lack of three-phase electric service often becomes a roadblock for the project. These installations use large motors, which require greater amounts of current during the first few seconds of startup. If single-phase electric service were used (rather than three-phase), the motor start-up and accompanying voltage drop would cause “blinks” for other customers on the line. Thus, three-phase electric service is typically needed for motors of 10 horsepower or larger.

If the distance to existing three-phase lines is more than a few miles, construction costs to extend lines to the site can rarely be justified by the customer or the power supplier. A separate device called a phase converter has been used in the past to drive large motors, but they do not match the needs of every application. A relatively new alternative is now available in the form of a single-phase motor that can drive loads from 15 horsepower all the way to 100 horsepower.

The single-phase Written-Pole[®] motor is proven technology now used on irrigation pumps, oil and natural gas equipment, grain facilities and other applications located miles beyond three-phase lines. Since 1996, the motor manufacturer *Precise Power Corporation* has marketed the motor in the U. S., Canada and selected foreign countries.

The Written-Pole[®] motor in unlike conventional motors in many ways. It gets its name from a patented technology, which “writes” magnetic poles on the rotor during start-up. This avoids the excessive start-up current (inrush) found with most motors. While conventional single-phase motors will draw six (6) to twelve (12) times their normal running current during start-up, a Written-Pole[®] motor draws only two (2) times its running current. At the same time, it delivers the needed power (torque) to start the load and keep it running. This means that motor loads as large as 100 horsepower can be served from conventional single-phase lines without creating voltage blinks for neighboring customers.

Written-Pole[®] motors are not well known by local motor suppliers as yet. But over 325 motor installations are now in place. The physical size of a Written-Pole[®] motor is somewhat larger than a conventional motor of the same horsepower, and it also costs more. But compared to the alternative of constructing three-phase power lines to the site, or the costs of running an internal combustion engine (fuel and maintenance), this motor can quickly pay for itself.

To learn more, visit the following websites:

www.Written-Pole.com and click on “Single-Phase Motors”.

www.PrecisePwr.com then select “Large Horsepower, High Efficiency Single-Phase Motors”

Electric power suppliers who would like additional information, or need help evaluating an application can call us at the *Rural Electricity Resource Council*, 937-383-0001. Ask for Richard Hiatt.

