



MagForce™ High Efficiency Motor Setup with Non-Franklin Electric VFD Settings

Requirements:

- VFD must be able to run high efficiency PM motors (permanent magnet motor controller)
- VFD (continuous current) sized based on the motor’s nameplate maximum amps, not horsepower
- Drive output filter is required with PM motor, DVDT filter = motor leads < 500’, SINE filter = motor leads > 500’

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| Motor Nominal Voltage | 460 V |
| Nominal Frequency | 120 Hz max. (default reference speed 115 Hz 3450 rpm) 115 Hz electrical frequency = 57.5 Hz shaft frequency |
| Motor Nominal Speed | 3600 rpm max (default 3450 rpm) |
| Nominal Current | Run pump and monitor motor current when running at 3450 rpm under normal on curve pumping conditions when surfacing water; Set motor nominal current to this current; Motor nominal current will vary depending on the size pump installed |
| Motor Cos Phi | 0.95 – 1.0 |
| Motor Nominal Power | Nameplate hp (max. hp @ max. amps) 15 hp (19.6 hp max. @ 22.4 amps) 30 hp (39.2 hp max. @ 46 amps) 60 hp (66 hp max. @ 80 amps) The MagForce motor can run up to 120 Hz/3600 rpm depending on what pump is installed (max. hp/amps not to be exceeded) |
| Number of Motor Poles | 4 |
| Max Current Limit | Set 1 amp above motor nominal current setting; Not to exceed motor name plate max amps |
| Minimum Frequency | Set so minimum flow requirements are maintained and prevent dead head at worst case head and draw down conditions; Minimum frequency 30 Hz shaft speed 60 Hz electrical frequency (60 Hz electrical frequency = 30 Hz shaft frequency) |
| Maximum Frequency | 120 Hz up to max. motor nameplate current (default 115 Hz, 3450 rpm) |
| Acceleration | 0 to 30 Hz shaft speed in 1 second |
| Deceleration | 30 to 0 Hz in 1 second or less |
| Stop Mode | Coast stop (default), ramp stop must be 30 Hz to 0 Hz < 1 second |
| Identification | ID run (at standstill) with/motor, cable and output filter installed |
| Run Mode | Scalar mode v/f |
| Control Mode | 2.5 kHz to 4 kHz (output filter dependent) default 2.5 kHz |
| IF Start | Enabled (if available) |
| Delay Start | Enabled 10 Hz/100% current |
| Protections | Limit restart delay to 5 minutes to prevent rapid cycling of motor Input phase, output phase, short circuit, undervoltage, underload, stall, sleep mode HOA to user’s discretion |