Commercial Aquatic Services, Inc.

# VFD INFORMATION

Watermark ENERGY REDUCTION

***Is it necessary to run your swimming pools motor/pump/filter system at 100% capacity 24 hours a day?***

We reduce the high energy consumption of pool filtration systems by controlling water flow using our VFD, timer/controller, and electrical bypass system. A simple 20% reduction to water flow will yield more than 50% in electrical savings.

***Your system does not need to run at 100% capacity all the time.*** **By utilizing proven and reliable technology to vastly improve existing motor/pump/filter system efficiency, while maintaining the highest water quality, you can reduce electric cost by 66% to 33%.**

**Benefits:**

- Cut electrical cost by 66% to 33% for 20+ years on your pool, spa and water features
- Reduce wear and tear on pumps, motors, heaters, filters and plumbing
- Receive an incentive from utility companies to cover half or more of the cost of equipment and installation
- Payback in under a year
- Adds backwash failsafe
- Coordination, start to finish, of all utility and health department paperwork and inspections
- Work with an experienced, reputable and customer-focused company

**Features:**

- Full three year, comprehensive warranty
- Programmed to exceed health department standards
- 100% compatible with every commercial motor/pump, filter system chemical control system and heater
- VFD plus timer/controller, electrical bypass, installation, system manual, training and service included

***"Commercial Aquatics Services is the Southern California premiere provider of Variable Frequency Drives (VFDs), the leading green technology for pools, spas and water features."***

**Contact us today for a free energy survey, analysis and proposal to see how much can be saved and how quick payback will be.**

**(949) 330-0048** **(877) SWIMCAS**

# CASE STUDIES

## Case study I
### Southern California High School
### Competition Pool: 486,000 Gallons

Before the VFD was installed, the pool was warm, clean and clear with excellent water quality. Cost to run the motors: $29,381 per year. After the VFD was installed, the pool was warm, clean and clear with excellent water quality. Cost to run the motors: $11,160 per year. Electric bill reduced by 62%

**Before VFD installation:**
The 40HP (25.8KW) motor ran at 100% i.e., 24 hrs a day. 365 days a year. = 226,008 KWH/year (13 cents per KWH) = **$29,381/ year**

**After VFD installation:**
The same motor now runs at 11.6 KW for 16 hrs and 6.2 KW for 8 hrs every day, all year. = 85,848 KWH/year (13 cents per KWH) = **$11,160/ year**

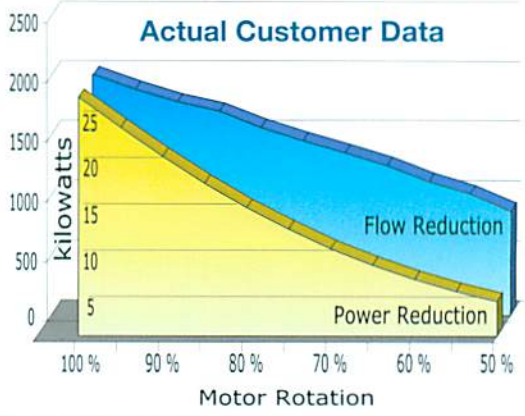
**Resulting in an annual saving of $18,221**

**With power utility incentive, payback was less than 6 months!**

## Case study II
**Foothills YMCA:** 128,000 Gal pool, 10HP motor, Power use before VFD system: 87,796 KWH, power use after VFD system: 32,149 KWH. Total annual savings: $6,844 with a 63% energy reduction.

## Case study III
**Cal State University Pool:** 287,000 Gal pool, power use before VFD system: 155,490 KWH, power use after VFD system: 82,004 KWH. Total annual savings: $9,553 with a 47% energy reduction.

## Case study IV
**Beach City Fitness Pool:** 787,000 Gal competition pool, power use before VFD system: 346,896 KWH, power use after VFD system: 209,418. Total annual savings: $27,222 with a 40% energy reduction.




**Power Versus Fow**

| A | B | C |
|---|---|---|
| 100 % | 25.8 KW | 2012 GPM |
| 95 | 22.5 | 1888 |
| 90 | 19.4 | 1782 |
| 85 | 16.5 | 1704 |
| 80 | 13.9 | 1567 |
| 75 | 11.6 | 1455 |
| 70 | 9.51 | 1355 |
| 65 | 7.75 | 1248 |
| 60 | 6.21 | 1115 |
| 55 | 4.91 | 1013 |
| 50 | 3.82 | 870 |

**A** Motor rotation percentage
**B** Power consumed in Kilowatts
**C** Water flow in gallons per minute

For more case study information see
**www.WatermarkEnergyReduction.com**

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