



Lower water pumping costs by reducing power usage with Danfoss Variable Frequency Drive Technology

PG&E Variable Frequency Drive Rebate Program



Esys® The Energy Control Company™

Authorized Distributor & Warranty Service Provider

Program Details

Irrigation

Agricultural Irrigation Pump Variable Frequency Drive (VFD)

Adding a variable frequency drive to irrigation pumps can enable you to reduce your irrigation system's operating pressure, thus reducing energy consumed by pumps. Adding a VFD also enables you to vary the flow of water as needed for your irrigation schedules, while providing additional benefits such as soft start capability, enhanced performance of equipment, and reduced equipment wear.

Note: A VFD can save energy in cases where pumps and irrigation equipment are oversized, or in situations with variable water supply or irrigation flow conditions. Consult an Esys expert or an irrigation system engineer for more information.

Requirements:

VFD must be installed on a single-speed pump motor for booster and/or well pump.

VFD must be used to control flow in pumping applications which require throttling below full flow to meet irrigation requirements.

Rebate is applicable to pressurized irrigation system types, including sprinklers, microsprinklers and drip, but excluding flood irrigation.

VFD is recommended, but not required, to meet power quality requirements as specified by Institute of Electrical and Electronics Engineers (IEEE) Standard 519-2014, Recommended Practices and Requirements for Harmonic Control in Electric Power Systems.

Operation must be a minimum of 1,000 hours per year.

Installation address must have an agricultural electric account with PG&E.

Exclusions:

VFD must be used to adjust operation of pump to meet flow/pressure requirements and not simply as a soft starter or for cavitation control.

VFD must NOT be solely for the following pumping applications:

- A well pump used to fill a reservoir
- A well pump discharging directly into a canal
- A mixed flow pump (high volume, low head)

Rebate is not applicable to industrial or commercial pumps. Only agricultural irrigation pumps are eligible.

Rebate Code	Description	Rebate/ Unit Measure
IR006	Well Pumps—Variable Frequency Drive Retrofit Only (\leq 300 hp)	\$30/hp/motor (max \$9,000)
IR007	Booster Pumps—Variable Frequency Drive Retrofit Only (\leq 150 hp)	\$30/hp/motor (max \$4,500)
IR008	Booster Pumps—Variable Frequency Drive New Pump (\leq 300 hp)	\$30/hp/motor (max \$4,500)
IR009	Well Pumps—Variable Frequency Drive New Pump (\leq 150 hp)	\$30/hp/motor (max \$9,000)

Rebate is not eligible in combination with A266 Sprinkler-to-Drip Irrigation Field Vegetables incentive.

Rebate is not eligible if rebate was previously received for Sprinkler-to-Drip (A266/A268/A269) or Low-Pressure Irrigation Nozzles (A272/A273) incentive in the last five years.

Application process:

Customer must supply an invoice or other supporting documentation that includes the quantity of VFD(s), type (well and/or booster), horsepower rating of motor(s) and VFD(s), area map showing physical location of pumps and the manufacturer's make/models of the VFD(s) installed.

Variable Frequency Drives (VFD) for HVAC Fans

Variable frequency drives improve the efficiency of HVAC fans by enabling them to respond more precisely to a building's heating and cooling load. Installing VFDs on HVAC fan motors helps prevent energy waste, reduce mechanical stress and prolong system life.

Requirements:

Drives must be applied to existing HVAC supply, return or exhaust air fans only.

Drives are eligible for this rebate only if throttling devices, such as inlet vanes or bypass dampers, are removed or permanently disabled.

Rebate is only applicable to the following building types: education (secondary schools, community college, universities), hospitals, hotels, nursing homes, large offices, multistory large retail.

Installation address must have a commercial electric account with PG&E.

Exclusions:

Fan size greater than 100 horsepower (hp) is not eligible for this rebate.

VFDs on cooling tower fans are not eligible for this rebate.

Rebate Code	Description	Rebate/ Unit Measure
H148	Variable Frequency Drive for HVAC Fan	\$80/hp

Agricultural Irrigation Pump Overhaul (\leq 25hp)

Overhauling irrigation pumps enables you to increase your irrigation system's efficiency. Without changing your irrigation system design, you can reduce the energy it takes to run the pumps while still distributing the volume of water your crops need.

Requirements:

Existing pump must be operational prior to the overhaul. Proof of the pump's operating status may be required in order to receive the incentive.



The horsepower rating of the pump must be less than or equal to 25 hp.

Pump type must be one of the following: submersible well, submersible booster, centrifugal booster, turbine booster or turbine well.

Pump overhaul must include at least one of the following: replacing the pump bowl assembly/impeller, trimming the existing impeller on a booster pump or adjusting the bowl and impeller on a deep well pump.

If adjusting the bowl and impeller on a deep well pump with semi-open impellers, all impellers in the bowl assembly must run in close proximity (0.003 to 0.007 inches) to the next lower bowl after adjustment. (For enclosed impellers with a principal seal that is parallel to the centerline of the shaft a close axial adjustment is not necessary.)

Installation address must have an agricultural electric account with PG&E.

Rebate Code	Description	Rebate/ Unit Measure
IR001	Centrifugal Booster Pump System Overhaul (≤ 25 hp)	\$75/hp
IR002	Submersible Well Pump System Overhaul (≤ 25 hp)	\$75/hp
IR003	Submersible Booster Pump System Overhaul (≤ 25 hp)	\$75/hp
IR004	Turbine Booster Pump System Overhaul (≤ 25 hp)	\$75/hp

Extra 33% in Pump Overhaul Rebates

Qualifying customers can now take advantage of increased rebates—totaling up to half the cost of the entire repair.

Industrial Process

Variable Frequency Drive (VFD) for Process Fan or Blower

Adding a variable frequency drive to a process fan or blower enables turndown of fan speed to match the process requirements. It also provides additional benefits of soft start and cooler operation of equipment, so it will last longer, run quieter and need less maintenance.

Product used for retrofitted process fans must be purchased on or after July 1, 2015.

Requirements:

VFD must be used to control flow and any previous flow control device (i.e., dampers or vanes) must be removed or permanently disabled.

VFD is recommended to meet power quality requirements as specified by IEEE Standard 519-2014, Recommended Practices and Requirements for Harmonic Control in Electric Power Systems.

Application may include installation and material cost.

Input data for each VFD and connected motor horsepower (hp) on separate line in PG&E Business Rebate Application found at: pge.com/bizrebates (Step 4).

Each VFD installed can have more than one fan motor controlled by that VFD.

Customer must supply an invoice or other supporting documentation that includes the quantity of VFDs, hp rating of motor(s) and VFD(s), and the manufacturer's make/model of the VFD(s) installed. A photo of the motor nameplate(s) is an acceptable method to document fan motor horsepower.

Installation address must have a nonresidential electric account with PG&E.

Rebate Code	Description	Rebate/ Unit Measure
PR002	VFD for Process Fan or Blower	\$140/hp (max \$10,500)



Esys The Energy Control Company has been providing sales and service in Central Southern California from its Bakersfield office, located at 4520 Stine Road, since 1985.

Esys specializes in providing process control instrumentation, process equipment, variable frequency drives systems, process control systems and field services to industries involved in agriculture, food and beverage processing, oil production and oil treating, pipeline transfer systems, chemical processing, water treatment, cogeneration, and manufacturing. Esys provides full service support for the products it sells.

Engineering

The Engineering Department specializes in the design and integration of electronic process control systems, electrical systems, mechanical systems and provides engineering services for industrial clients. Esys personnel possess expertise in flow, level and pressure control, combustion related processes, oil production, water treatment processes, liquid and gas flow transfer systems, and emission monitoring systems. Engineering drawings are generated using AutoCAD computer aided design. Esys also provides turnkey PLC programming services.

Construction

Esys is a State of California licensed C-10, C-8, and C-4, Contractor. The Construction and Service Departments specialize in the installation and service of the process control hardware provided by Esys. The construction and service personnel are trained in the field of process control technology with emphasis on the products which Esys furnishes. Esys provides turnkey installation services from design to startup.

Control Panels

Esys provides a variety of custom designed electronic control panels, variable frequency drive system panels, and electrical panels, which are assembled and tested at the Esys UL-508 panel construction facility in Bakersfield, California. The Construction and Service Departments also provide control panel installation and startup services.

Repair

Esys provides repair services for most products sold from the Esys Bakersfield Woodmere and New Horizon facilities. Repair capabilities include the repair and load testing of variable frequency drives. Instrument repair is performed using NIST traceable test equipment. A large spare parts inventory is available at the Bakersfield New Horizon Esys facility.

Why Choose Esys?

USA Commitment by 100 Skilled and Trained Esys® Direct Employees

31 Years Experience

Certified Welders: B31.3, Section 9

C-4, C-8, & C-10 Licensed Contractor

7 Construction Crews

12 Service Technicians

Extensive On-Site Inventory

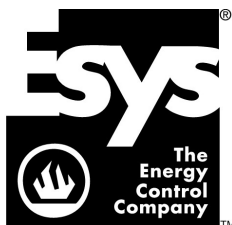
California State Licensed Electricians

50,000 ft² of Local Facilities

In-House Engineers & Services:

System Engineering • Software Engineering • Project Management • Instrument Repair Shop

Hydraulic Crane Service • Construction Installation



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