

Variable Frequency Generator®

3.0



Advanced Thinking – Down to Earth Service



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By bringing together a highly experienced team with state-of-the-art manufacturing and a deep commitment to customer service, Canadian Advanced is able to deliver superior high pressure pump applications and leading variable speed drive systems to the global oil

and gas industry. Located in the heart of Canada's energy sector, our focus is on Electric Submersible Pump Systems for Artificial Lift applications, Horizontal Pump Systems for a variety of high pressure applications and innovative Variable Speed Drive Systems.

Engineered Operating sophisticated production processes in challenging conditions, extreme climates and remote locations requires reliable pumping systems. Canadian Advanced pumping systems are the industry choice, producing more flow, more head, greater efficiency and wider operating ranges than most competitor's offerings.

Canadian Advanced creates high quality, innovative, safe and environmentally sound solutions by applying advanced state-of-the-art technologies, strict quality management and superior engineering capabilities. Our detailed process and application knowledge has allowed us to develop several patented engineering solutions as well as custom design systems when required.

Quality and Safety All Canadian Advanced operations are certified to ISO 9001:2000 and OHSAS 18001:1999 standards to ensure the highest quality products with the greatest value for customers worldwide. Quality assurance begins with a contract review and continues throughout the entire process. All products are inspected and performance tested in line with relevant API and other specification criteria before leaving the factory.

Variable Frequency Generator (VFG)©

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The VFG is a new innovation in GENSET technology brought to you by Canadian Advanced. The VFG provides a superior power supply for an Electric Submersible Pump (ESP) and many other loads.

Features and Benefits

> Innovative Technology	Generates pure sine wave output with no harmonics across its full variable speed and power range.
> Wide Operating Ranges	Wide standard range of frequencies (40 Hz to 70 Hz), voltage (1000 VAC to 5000 VAC) and power ratings (365 KW to 1500 KW).
> Proven System Components	Design is based on proven system components with long industry standing.
> Cost Effective and Efficient Solution	Provides high electrical efficiency combined with reduced energy consumption and competitive initial cost.
> Low Maintenance	VFG pure sine wave output significantly reduces wear on all system components resulting in extended Mean Time Between Failures (MTBF), higher availability and lower maintenance costs.
> Expert Advice	Professional engineers design VFG driven pumping systems that exactly meet your application requirements.
> More Power, No Oversizing	The VFG can fully exploit both engine and generator ratings to feed the drive requirements of the system.
> More Production	Depending on size and system parameters, production benefit can be as high as 12% when comparing conventional Gensets of the same rating.
> Higher Starting Torque for Stuck Pumps	In case of hard starting conditions the VFG can provide more voltage and current at any frequency to break a pump free.
> Smaller Footprint	VFG eliminates components that are relatively large (i.e. VSD's, transformers, filters, etc.) and is a power provider itself.
> Moveable, Recoverable Asset	The VFG can be easily relocated making it an ideal choice for powering ESP systems in remote locations.

Standard Operating Ranges

<ul style="list-style-type: none">• Reduced Voltage Starting• Reduced Frequency Starting• Extra Hard Starting Capacity• Accelerating Start• Pressure Point Control• Extended Ramp Time• Ideal Sine Wave• Voltage Optimization on Fly• Current Optimization on Fly• Frequency Optimization on Fly	Size	Power Rating eKW	Frequency Range Hz	Voltage Range VAC	Amperage Max. A
	VFG 68	68	40 - 70	480	102*
	VFG 160	160	40 - 70	480	240*
	VFG 215	215	40 - 65	480	323*
	VFG 250	250	40 - 65	480	376*
	VFG 350	350	40 - 65	480	526*
	VFG 432	432	40 - 62	1000 - 2000	120
	VFG 660	660	40 - 62	2000 - 4100	116
	VFG 1000	1000	40 - 62	2771 - 4800	150
	VFG 1500	1500	40 - 62	2771 - 4800	225

*Includes Step-Up Transformer. For other sizes please contact factory

Typical VSD Output Waveform - Unfiltered



Typical VSD Output Waveform - Filtered



Typical VFG Output Waveform



Canadian Advanced provides a broad range of pumping systems.

Electric Submersible Pumps (ESP)

Canadian Advanced manufactures a wide range of ESP for artificial lift and other specialized applications. Many specially engineered and often patented solutions provide equipment that is tailored to your specific operating conditions - like our Super Duty Sand Pump® that can master the toughest abrasion conditions in the industry.

Horizontal Pumping System (HPS)

Canadian Advanced manufactures a range of HPS for low flow/high head applications like crude oil transfer, pipeline booster, water injection and reverse osmosis. The HPS technology distinguishes itself as a cost effective alternative to other designs like multi-stage barrel, split case and segmental pumps and is based on proven multi-stage centrifugal pump designs that are used in our ESP product range.

Variable Frequency Generators (VFG)

Canadian Advanced has designed and manufactures a unique power supply system that eliminates the need for variable speed drives, harmonic power filters and step-up transformers. It provides pure sine wave and significantly extends your MTBF and production rates. Combined with an improved electrical efficiency the VFG reduces both, capital and operating costs.

Variable Frequency Drive (VFD)

Canadian Advanced is proud to introduce a new VFD product line to the ESP market, the ACT (Advanced Control Technology) VFD control panel. ACT is supplied with the latest, high performance, full vector drive technology from Mitsubishi. With superior starting torque and precise speed control, ACT will rival all other VFD technology in the ESP industry today.

Advanced Monitoring Technology (AMT)

Canadian Advanced provides Advanced Monitoring Technology (AMT) and can help producers implement this system with ease. It is a flexible, easily installed system supporting secure on-demand viewing of remote site data. Producers are able to view their wells from anywhere with an internet connection and a web browser. The implementation of this system enables producers to reduce costly down-time and equipment.

Specialty Engineering & Testing

In addition to our standard products, Canadian Advanced specializes in Custom Product Engineering. Our modern and extensive testing facilities guarantee you thorough testing of each engineered solution before the product is shipped to the field. As well, Canadian Advanced also has the ability to offer all materials and accessories needed for the installation and maintenance of ESP and HPS applications.



ISO 9001:2000
OHSAS 18001:1999
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