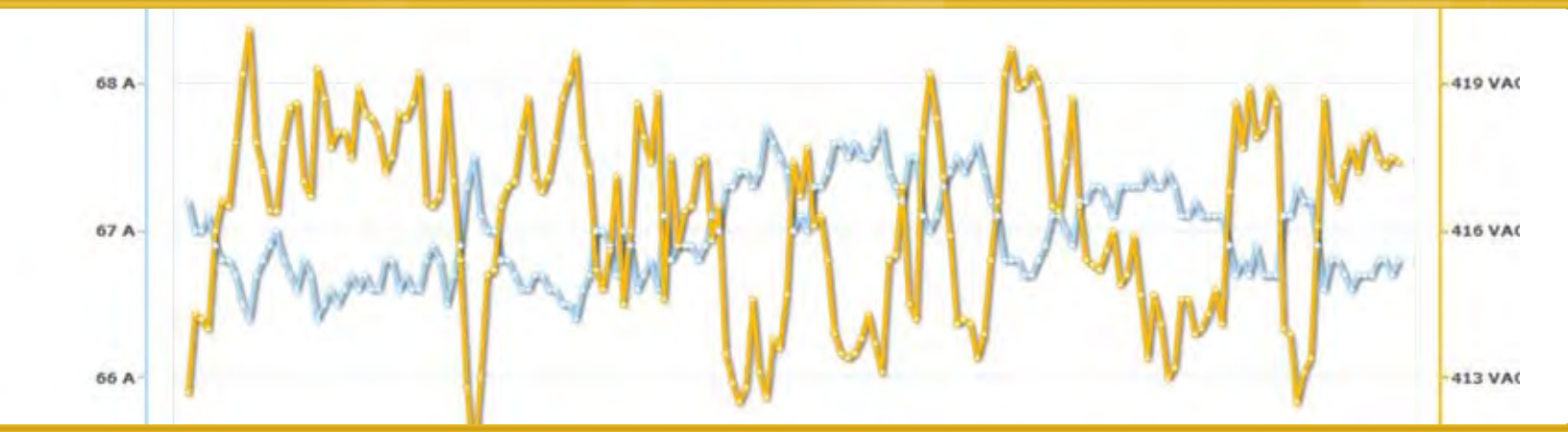
Canadian™ ADVANCED ESP

Advanced Monitoring Technology 5.0



Advanced Thinking – Down to Earth Service

AMT Logger

An economical, easily installed device designed to capture and store continuous data samples from multiple ModBus enabled devices. The raw measurements are extracted from the unit using a USB Flash Drive (included). A program is also provided that supports the conversion of the raw data to a .CSV file format which can be read by most spreadsheet applications.

Environment	
Operating Temperature	-40°C to +85°C for processor board and I/O
Relative Humidity	5% to 95% non-condensing
Enclosure	
Type	35 mm DIN rail mounted, painted aluminum, NEMA 12
Dimensions	18" x 15" x 7.25"
Power	
Input Power	8 VDC to 38 VDC, 500 mA maximum
Power Consumption	2 W nominal
Input / Output	
On-Board	(2) RS-232 full duplex (maximum baud rate 115,200 bps), (2) USB 1.1
Other	
• LED Status indicators for power and operation	
• 1 GB on-board non-volatile data storage and 1 GB USB Flash Drive	
• Raw Data to .CSV conversion program	

AMT Monitor

This system supports the secure on-demand viewing of remote site data through a standard Web browser. It captures continuous data samples from multiple ModBus enabled devices and transmits data to a central server on a scheduled basis. A programmable alert system provides automated callouts via email and SMS.

Environment	
Operating Temperature	-40°C to +85°C for processor board and I/O, -30°C to +60°C for modem
Relative Humidity	5% to 95% non-condensing
Enclosure	
Type	Wall mounted painted steel NEMA 4
Dimensions	18" x 15" x 7.25"
Power	
Input Power	8 VDC to 38 VDC, 500 mA maximum or 115/230 VAC, 50/60 Hz
Power Consumption	2 W nominal (50 W maximum when internal heater is active)
Backup Power	Standard battery based UPS with 2 hours off-line support
Input / Output	
On-Board	(2) RS-485 half duplex and (2) RS-232 full duplex (maximum baud rate 115,200 bps), (2) USB 1.1
Data Communication	
Wireless	Standard CDMA, Optional GSM, Satellite
Other	
• LED Status indicators for power and operation	
• 1 GB on-board non-volatile data storage and secure Web-based data access application	

AMT Node

This system is flexible and easily installed, supporting the secure on-demand viewing of remote site data and control of devices through a standard Web browser. A programmable alert system also provides automated call-outs via email, SMS and/or cellular. Integral to its core are an RTU, PLC and Controller.

Environment	
Operating Temperature	-40°C to +85°C for processor board and I/O, -30°C to +60°C for modem
Relative Humidity	5% to 95% non-condensing
Enclosure	
Type	Wall mounted painted steel NEMA 4
Dimensions	18" x 15" x 7.25"
Power	
Input Power	8 VDC to 38 VDC, 500 mA maximum or 115/230 VAC, 50/60 Hz
Power Consumption	2 W nominal (50 W maximum when internal heater is active)
Backup Power	Standard battery based UPS with 2 hours off-line support with optional solar panel
Input / Output	
On-Board	(2) RS-485 half duplex and (2) RS-232 full duplex (maximum baud rate 115,200 bps), (2) USB 1.1
Expansion Modules (Optional)	Digtal: 0 to 30 VDC inputs, 1A relay outputs with normally-open or normally closed contacts Analog: 0 to 10 VDC or 0 to 20 mA, 12 bit LAN: RJ-45 , 10/100 Base-T
Data Communication	
Wireless	Standard CDMA, Optional GSM, Satellite, Bluetooth
Wired	Optional Ethernet, Radio Modem
Other	
• LED Status indicators for power and operation	
• 1 GB on-board non-volatile data storage and secure Web-based data access, control and configuration application	

Distributed Web Based Monitoring System

AMT Monitor

The implementation of the Advanced Monitoring Technology (AMT) system enables producers to reduce costly downtime and equipment failure. The distributed approach provides producers with information to monitor their wells from anywhere as long as they have an internet connection and a Web browser.

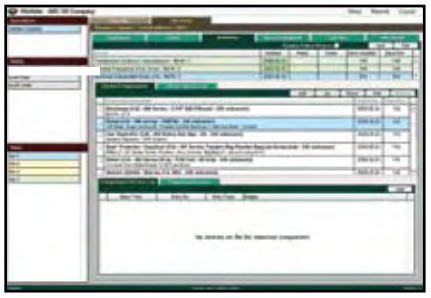
The AMT End User Interface (EUI), provides timely production information for viewing, trending and alarming. The Operations departments can manage their field remotely and prioritize intervention proactively.

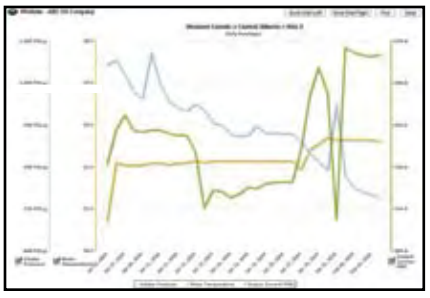
The system can be configured to send an email or SMS message whenever production interruptions occur. The EUI dashboard screen provides the operator with a summary of the well conditions at a glance. A trending screen can provide information that can be used to analyze the cause of production interruption or equipment failure.

The reporting feature can be used to provide information such as mean time to pump pull, run time hours and other information necessary for optimal Operations and Production Management.©

This remotely hosted system provides all the benefits of a SCADA system without the costs and support issues related to traditional SCADA systems.

The asset management and pump tracking system is an integral part of the well site data management and optimization solution. The system can be accessed for data such as well files, amp charts or can provide detailed information regarding the installed well site equipment.





Technology Comparison

SCADA	AMT
> Numerous Components	> End to End System
> Specialized Hardware & Software	> Web Based
> Complicated and Long Installation Time	> Plunk-Plug-Play
> $20k to $40k per site	> $5k per site
> Private radio networks, complicated and expensive	> Public wireless networks, no intervention is required
> In-house host, expensive and problematic	> Outsourced central Web server, powerful, robust & secure
> Information is available only through a central location	> Web based distributed system
> Access to information limited by software license	> Unlimited access

Web Services and access will be provided by CAI under their standard conditions.

Features and Benefits

> Alarm notification on the user interface	Proactive intervention, based on well site information to customize a solution. Down time can be reduced significantly.
> Information at a glance on the EUI Dashboard screen	Fast and timely reaction to problems and issues as they occur.
> Data Logger	Current or historical information can be accessed via a central server for long term trends and analysis.
> Notifications of alarms or shutdowns by email or SMS	Multiple notifications can be sent out 24/7 to allow for flexibility.
> Event history	All events along with operator interventions are captured in an event journaling file system.
> Asset management and pump tracking system	An integral part of the EUI provides easy access to all well site records and equipment information to be used for reporting or trending.
> Data trending	A graphing feature allows engineers and operators to analyze data points against time, for customized solutions for well intervention.

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)

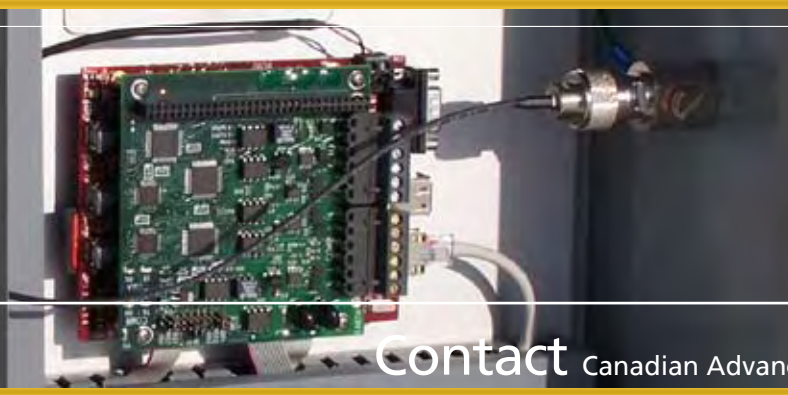
Canadian Advanced is proud to introduce a new VFD product line to the ESP market, The ACT (Advanced Control Technology) VFD control panel. ACT is supplied with the latest, high performance, full vector drive technology from Mitsubishi. With superior starting torque and precise speed control, ACT will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

Advanced Monitoring Technology (AMT)

Canadian Advanced provides the AMT and can help producers implement the iWellsite Monitoring System. 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 failures.

Specialty Engineering & Testing

In addition to our standard product, 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 9001:2008, ISO 14001:2004
OHSAS 18001:1999
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