

## Functions/benefits of Apeks automated controls

It is important for owners/processors using a fully-automated CO<sub>2</sub> extraction system from Apeks to understand how the controls work to improve the extraction process, as well as their overall operations. Information listed here serves to explain the various functions and benefits of the automated controls.



The Allen Bradley Programmable Logic Controller (PLC) with a simple touchscreen user-interface (Human Machine Interface, HMI) continually monitors and updates the extraction process automatically making any necessary adjustments. For example, if the temperature in the extraction room drops during the evening, the system will adjust the level of CO<sub>2</sub> in order to maintain the temperature and pressure levels set by the operator.

**Ease of inspection.** Apeks Supercritical CO<sub>2</sub> Industrial control panels are UL Listed: Certification UL508A. The rigorous standards set by the Underwriters Laboratories mean that the electrical controls are: 1) safe, and 2) utilize high-quality, high-performance components. State agency regulators recognize and appreciate the significance of UL certification.

**Product consistency.** Because the automated system controls and maintains all operating parameters, operators experience far greater consistency in their extractions. The Programmed Logic Controller (PLC) updates the programmed run 200 times/second, automatically making any necessary adjustment.

**System updates/troubleshooting with remote access.** Access to a system's automated controls via Internet connection allows Apeks to provide quick solutions and eliminates the need for an onsite service call.

**Additional levels of safety.** Processors enjoy greater peace of mind knowing that the automated controls continually monitor the run in real time, making adjustments before any manual protective measures would be necessary. For example, if the pressure gets too high, the system automatically adjusts the level of CO<sub>2</sub>. Or if the water level in the chiller gets too low, the system automatically shuts down.

**Operational cost savings.** Because the system operates automatically once parameters are set and the controls engaged, owners are not dependent on specially-trained operators to run the equipment.



UL 508A Listed



U-54766



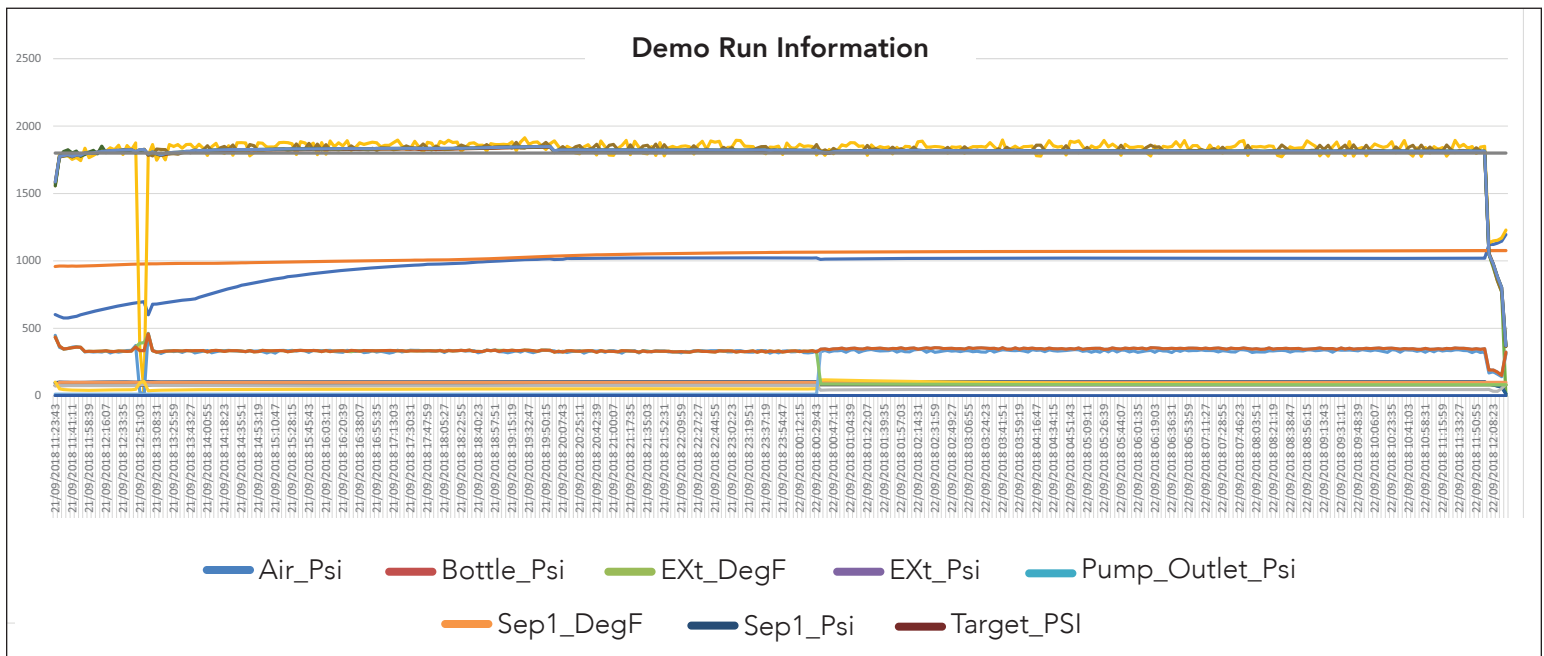
ApeksSupercritical.com  
Made in the USA at:  
150 Commerce Blvd.  
Johnstown, OH 43031  
740-809-1160

**Also available with Apeks Supercritical Production series models – The Transformer™ and The Force™:**

**Email notifications.** Apeks customers can receive up to 25 different notifications on the status of an extraction run so they can stay informed of what’s taking place whether they are on or off site. They can conveniently leave the production site and return hours later to harvest the oil when alerted the run is complete.

**Data logging.** Data-acquisition software precisely enters data points during an extraction run so system users can track, verify and record temperature and pressure variations giving them greater control of the quality of the extractions. They can identify precisely how changing a particular variable specifically impacts the extraction.

**Real-time monitoring.** Equipment operators can see all the data – temperature, pressure, valve positions, etc., at any given point during the run.



The data-logging function tracks and records temperature and pressure variations so equipment operators can compare amounts of oil in product strains. All electronic data of each extraction can be reviewed and stored for future reference. The data-logging function is especially useful when the system operates unattended.



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