



FALKONAIR

SMART COMPRESSOR CONTROL Powered by FALKONAIR

Energy savings, temperature control and humidity improvement

Creating a World of SMART Compressors



Approximately 40% of all the total energy consumed within the United States comes from the commercial building sector. Motor loads from heating, air-conditioning, ventilation, and refrigeration equipment (HVAC-R) are among the greatest electricity consumers. Facility operators seeking to reduce energy consumption, expand equipment lifespan and reduce the cost associated with these types of systems have not been able to find a viable solution at a reasonable cost.

A retrofit solution was needed to improve system efficiencies on the countless number of high energy consuming fixed speed compressor and fan motors on existing facilities throughout the world. A global solution was needed for all compressor types to battle escalating carbon reduction goals expanding across the planet and most importantly, relief for existing electrical grids.

We set out to create the most effective retrofit or OEM solution for fixed speed induction motors. A solution that provides increased reliability, compressor protections and easy to install. Our solution, the Smart Compressor Control (SCC) can be installed on all fixed speed compressors ranging from scroll, reciprocating and screw. It can be easily retrofitted on refrigeration systems, RTU's and chiller applications. Easy retrofit installation involves minimum operational downtime and the SCC can also be utilized as an OEM product solution. Swift ROI scenario on almost every project. No size too small and no size is too big.

As we know, Variable Frequency Drives (VFD's) deliver significant energy efficiency improvements when placed on any three-phase induction motor. When pairing the innovation of the Smart Compressor Control with one of the major global VFD brands, this powerful combination will deliver immediate improvement in system performance, reductions in energy consumption and improved humidity control.

The Smart Compressor Control turns your compressor into a SMART compressor without having to swap out existing equipment. The SMART algorithms of the SCC allow for increased compressor protections by maintaining a healthy oil return sequence, alarms for compressor discharge and suction temperature discrepancies, less short cycling, and soft start-up capability. Additional features include voltage optimization, zero inrush current and compatibility with most major brands of BMS systems.





IOT

TRANSFORMING OPERATIONS

The Falkonair Research and Development team has gone even further by not just increasing the life span of the compressors and saving energy. The SCC is currently compatible with multiple major VFD brands and has the capability to Modbus comm control, monitor and cloud upload data for past and present compressor operation and behaviors.

The communications are via RTU, RS485 and RS232 technology which has the support of the direct IOT links to establish a better behavior and an ambient temperature adjustment to continue improving the sustainability and energy efficiency throughout the year, through all seasons.

The Smart Compressor Control is unique, it is built with an algorithm that maintains oil return, maintains a satisfied discharge temperature, and maintains a satisfied suction temperature entering your compressors. After several years of R&D developing and fine-tuning the Smart Compressor Control, ensuring that if you maintain temperature on those two points, your compressor will work at its optimum with little effort to consume energy.

The Smart Compressor Control team has made it our mission to develop a control that retrofits onto any fixed speed compressor in partnership with a VFD that solves the problem of the electrical consumption, and cut-out CO2 emissions.

Designed for easy install and use

The Smart Compressor Control is designed to be installed by any air-conditioning or a refrigeration technician. It is easy to setup and easy to program.

The Falkonair team always bear in mind that time is money and learning any new control can be time consuming. There is no need for all technicians to attend an in-house full day training course. When we design any new products, we endeavor that our Operations and Instruction Manual is simple to follow. The twenty-page manual enables you to be able to install our controller, your choice of VFD and be up and running in less than three hours from start to finish.

There are no passwords or secret menus to access different levels of operation, the algorithm built into the program does all that work for you. Just let the control know what your suction and discharge temperatures at that time are, and let it do its work.

This is the simplicity of our control; and that's why we believe it changes your old compressor to a smart one. With expected energy reduction of up to 50% and the bonus of increasing the life span of your compressor.

One Stop Shop

The Smart Compressor Control also has the capability to control fan motors on the condenser and evaporator. It can be utilized for all applications, whether they are a full refrigeration rack with multiple compressors or a simple single compressor and fan motor. We also use the same controller for HVAC roof packaged DX systems and water chillers (simply changing the dip switch set up).

The innovation behind the SMART Compressor Control will make it one of the most desirable green technology solutions for the foreseeable future. It will push the US Department of Energy's (DOE) Better Buildings Standards to a new, higher level for decarbonization.

Benefits of the Smart Compressor Control

- ▲ Compressor modulation for greater energy efficiency
- ▲ Energy savings 30 to 50% on AC induction compressor and fan motors
- ▲ Reduced demand charges
- ▲ Reduces carbon footprint
- ▲ Precise temperature and humidity control
- ▲ Voltage optimization and zero inrush current
- ▲ Quick return on investment (ROI)
- ▲ Enhanced reliability
- ▲ Decreased noise levels
- ▲ Lower long-term operational cost
- ▲ Adaptable to major VFD brands
- ▲ Fits all size three phase HVAC-R systems
- ▲ Cloud based uploads. Live data gathering
- ▲ Communication via MODBUS RTU, RS485 and RS232 technology

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For more info contact: info@falkonair.com

or visit our website: www.falkonair.com