

COMPRESSOR CONTROLLER

AIR COMPRESSOR ENERGY EFFICIENCY AND BETTER AIR QUALITY JUST GOT EASY!

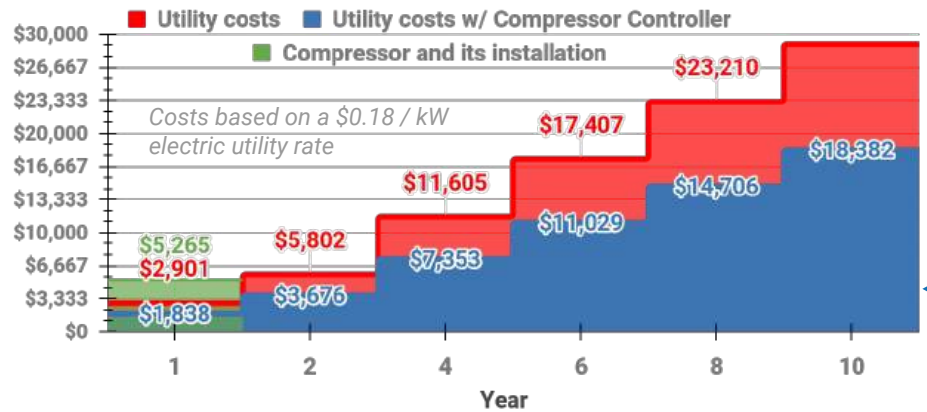
Compressor Controller a SAM Controllers product, assembled in North Carolina. CompressorController.com

Transforming your air compressor from a costly necessity into a cost-saving asset. By delivering proven energy savings, the Compressor Controller addresses the primary expense of operating an air compressor, significantly reducing your bottom line. But the benefits don't stop there – from the moment of installation, this innovative device enhances reliability and ensures safer performance, making it an invaluable addition to your machinery.



7.5HP AIR COMPRESSOR LIFETIME COST BREAKDOWN

A Department of Energy funded study by Pecan Street demonstrated that the Compressor Controller provides **significant energy savings and achieves 100% reduction in compressed air moisture.**



The Compressor Controller optimizes air compressors with its simple-to-install, bolt-on automation. Compatible with all reciprocating compressors, it seamlessly integrates into single or multiple pump systems, regardless of stages. This versatile solution works with or without dryers, often eliminating their need entirely. Its user-friendly design allows for seamless integration, typically completed in just hours. With built-in safety features and scalability options, the Compressor Controller optimizes performance and enhances efficiency year after year.



As featured in



"The Compressor Controller transformed our air compressor from a costly problem into a strategic asset. It's cut expenses, slashed downtime, and supercharged our manufacturing efficiency. In short, it's become the unsung hero of our production line."

– Electronics Manufacturing Factory



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Why Change: The tried and true ways have been around, but at what cost?

For years, air compressors have relied on traditional components like pressure switches with springs, timer-based controls, and standalone air dryers. While these tried and true methods have been around for a long time, they come with hidden costs that can significantly impact your bottom line, for instance:

Traditional equipment



Springs Drift: Most air compressors come with a factory-installed pressure switch containing springs and diaphragms. Due to temperature fluctuations and wear, the pressure drifts by up to 20% per year, leading to significant energy waste, reduced performance, and higher costs. There's also a risk of the spring switch getting stuck running non-stop and overheating if debris or insects get caught or the spring breaks, potentially causing damage and downtime.

Typical Yearly Costs in a 7.5 HP Air Compressor:

Initial Cost: \$75
Typical cost of yearly energy waste \$229 - \$458 per year



Timers Just Don't Know: Many air compressors use simple timer-based controls that are inexpensive but not intelligent enough to adapt to real-world changes in compressed air demand or ambient temperatures. As a result, timer-controlled compressors often run unnecessarily. The only way to optimize a timer-based system is through impractical hourly reprogramming.

Initial Cost \$75
Typical cost of yearly energy waste \$114 - \$229 per year



Overworked Air Dryers: Air dryers, responsible for removing moisture, frequently operate beyond their required capacity, inadvertently increasing the energy consumption of an air compressor system. *(The Compressor Controller, in certain situations, may even render a separate dryer obsolete, thereby further diminishing equipment and operational costs.)*

Initial Cost \$2,500
Typical cost of yearly energy waste \$229 - \$582 per year



Compressor Controller: Unlike traditional systems, it optimizes performance and air quality while delivering long-term savings. Installing the Compressor Controller has as much bottom-line impact as choosing the compressor itself.

initial Cost: \$800
Average amount of Savings delivered: \$1,000+ per year

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How the compressor works: **Active Feedback**

The active feedback-based Compressor Controller automatically optimizes air compressor operation, maintaining peak performance, maximum efficiency, and enhanced safety. By constantly evaluating environmental and operational conditions, the Controller eliminates the need for manual daily programming. User preferences can be modified, but the default settings ensure optimal performance without extensive training. Investing in a Compressor Controller with active feedback programming streamlines air compressor management, allowing you to focus on other critical aspects of your business while achieving maximum operational efficiency and safety.



Operational Benefits



Active Controllable Start: Intelligently manages compressor pump unloading during startup, reducing peak power draw, reducing pump-oil water contamination and extending the life of critical components.



All Digital: Drift-free digital pressure sensor and precise tracking of operational metrics (hours run, maintenance timer, and issues) ensuring optimal performance.



Smart Drain: Automatically calculates and drains moisture from the tank, achieving 100% air moisture reduction without wasting pressure or causing clogs.

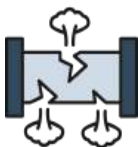


Instant Scalability: Effortlessly add additional compressors to an air network with pairing two Compressor Controllers together to increase capacity and or redundancy.

Added Safety



Overheat and Overrun Safeguards: The Compressor Controller continuously monitors pump temperature and runtime, detecting when critical thresholds are reached. This advanced protection detects and prevents additional damage from overheating or excessive wear, ensuring the longevity of your equipment.



Rupture Detection and Prevention: The controller identifies sudden ruptures in air networks and prevents the compressor from starting, shielding air systems from costly damage and minimizing downtime. This proactive approach safeguards your investment and keeps operations running smoothly.



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The Financial Case for Implementing the **Compressor Controller**

If you're hesitating to install a Compressor Controller for your air compressor system, consider the financial impact of this decision. A compressor controller can reduce annual energy costs by up to 40%, ensuring cost-effective operations and maximizing your ROI.

By addressing inefficiencies like air drift, drain, and timer maintenance, a Compressor Controller optimizes the performance of connected equipment. Additionally, it provides a reduction in startup current, enhancing electrical network stability. If your system includes a dryer, expect a further cost reductions.

Investing in a compressor controller delivers immediate and long-term benefits, with an **ROI achieved in less than a year** for most applications. It's a smart choice for businesses looking to optimize efficiency and minimize operational costs.

Annual air compressor energy costs chart



Sources/Bibliography:

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Sullair. (2019). The Compressed Air System: A Planning Workbook.

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Chart Key	Air Compressor H.P.	Average Yearly Savings w/ Compressor Controller	Average LifeTime Savings w/ Compressor Controller
	5	\$709	\$7,085
	7.5	\$1,063	\$10,628
	10	\$1,417	\$14,171
	20	\$2,834	\$28,341
	Any	<i>Compressor Controller relative cost reference</i>	

The calculations for the cost of running air compressors with different HP ratings were performed using the formula: Electrical cost = Total HP x .746 x hours x KWH cost ÷ motor efficiency Where: Total HP = Compressor HP rating x 110% Hours = 8 hours per day KWH cost = \$0.1668 per kilowatt-hour Motor efficiency = 70% Assumptions: Compressors run 8 hours per day, 22 days per month, 12 months per year Lifetime/ Lifecycle cost is calculated for 10 years - The formula is a standard method described in industry resources such as CAGI and the U.S. Department of Energy's "Improving Compressed Air System Performance" guidebook. Averages used for Low/High ranges of air drift, timer, drain and dryer costs.



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How the Compressor Controller Integrates

The Compressor Controller is designed to seamlessly connect as an add-on to any single or dual pump reciprocating compressor, making it a versatile and easy-to-install solution for enhancing the performance and efficiency of your existing or new air compressor system.

How to Get Started

Installation Overview


- Typically takes 2-3 hours
- Requires 10 minutes of initial configuration
- Can be combined with a VFD or Solid state starter for even greater efficiency.
- Many utility rebates available that cover the cost of equipment and its installation.

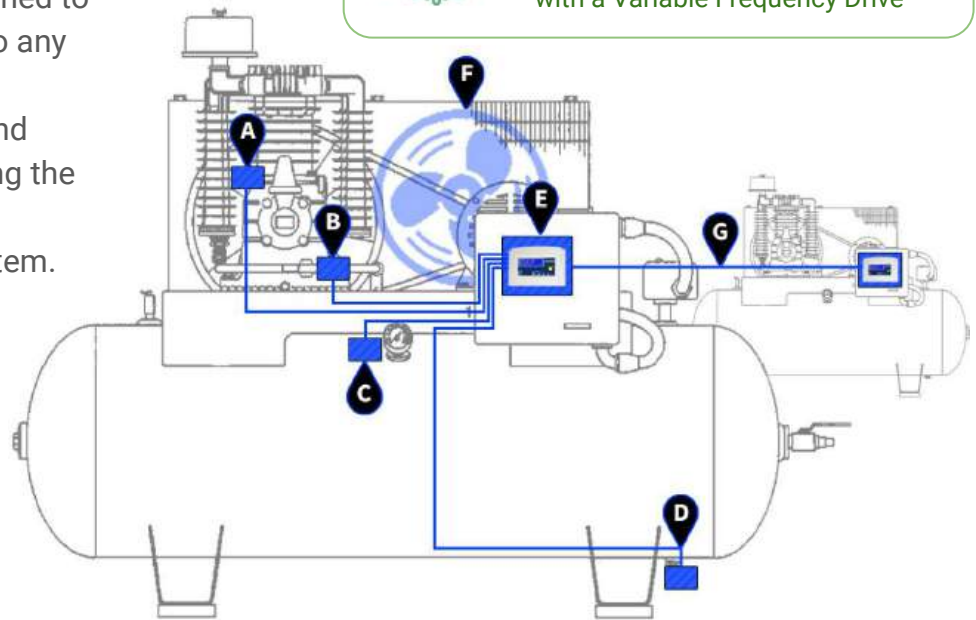
DIY Installation

- Easy to follow instructions
- Bolt-on ready kits available for several models.

Professional Installation

- Schedule one of the Nationwide installers to integrate it for you

 Utility Energy Rebates and grants may be available to cover up to 100% of the cost and installation with a Variable Frequency Drive



- A. Pump Temperature Sensor** – Measures the pump temperature and performance.
- B. Unloader Valve** – an electrically (NO) actuated valve that is added to the existing unloader valve.
- C. Digital Pressure Sensor** – 304 Stainless steel body digital pressure sensor with 1% accuracy and long-term stability: Less than 0.1%FS/year.
- D. Drain Valve** – an electrically (NC) actuated valve that is added to the drain valve and automatically controlled.
- E. Compressor Controller** - installed in to an enclosure.
- F. Intercooler Fan Output** – NO and NC output for an auxiliary fan, an and can be optionally installed to improve intercooler performance in two-stage air compressors.
- G. Compressor-City link** – Connection to other Compressor Controllers to scale air compressors for higher CFM and/or increased redundancy.

Visit www.CompressorController.com

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REV 062424