



**COMPRESSOR
CONTROLS
CORPORATION**

Air Miser®

Unique Control Solutions Specifically Tailored for Plant Air Compressors

Compressor Controls Corporation has thirty years experience as the leading provider of advanced turbomachinery controls solutions that reduce energy waste, particularly on compressed air systems. Considerable energy savings are achieved by eliminating excessive blow-off, responding rapidly to sudden changes in air demand, and minimizing while precisely controlling system pressure. Combined with this, increased compressor uptime and decreased maintenance costs due to better surge control and machinery protection can add significantly to your plant's bottom line.

To realize these advantages CCC offers the Air Miser® Control System – the better solution for integrated control and protection of plant air compressors and optimization of the compressor network energy balance.

Single Solution for Energy Savings and Machinery Protection

- Constant header pressure and elimination of unnecessary blow-off under conditions of fluctuating air consumption
- Efficient load distribution between compressors of both equal and unequal power ratings
- Intelligent compressor network capacity management based on the air flow demand
- Dependable surge control and machinery protection functions

Standard Package Plus Versatile Options

To suit your plant needs and budget CCC supplements the standard Air Miser® TL control package with the optional Value and Instrumentation packages. Engineered solutions are also available to meet customer-specific requirements, such as API 672.

Hassle-free Operation and Maintenance

The standard NEMA 4 enclosure houses a touch-screen operator panel, push buttons and status indicators providing local access to the control system for operation and maintenance. Remote access is possible via serial communications and Ethernet.



Key Benefits of Air Miser Control Solutions

- Completely replaces obsolete and/or inadequately functioning control panels
- Proven controls techniques at competitive market prices
- Continuous operation at the lowest possible system pressure – maximizes energy savings without compromising responsiveness to sudden increases in air demand
- Precise pressure control under conditions of constantly changing air consumption
- Superior surge control - increases turndown and prevents surge during rapid air flow cut-offs
- Reliable and precise constraint (limiting) control action - maintains operation of compressor and electric motor-driver within safe limits
- Unique load-sharing scheme - keeps the compressor network balanced and the load optimally distributed, and allows load sharing between various compressor makes
- Smart compressor network capacity management (CNCM) - determines optimum number of the online compressors based on actual air demand
- Automatic startup/loading and shutdown/unloading - simplifies operation
- Control loop interaction avoidance and loop decoupling - stabilize system pressure
- Fallback strategies – safely prevent unwanted trips due to failed instruments
- Corrective functions aimed at improving valve performance

User-friendly Operator Interface Panel

- Displays critical parameters and alarms
- Allows trending of process data
- Allows set point adjustments, basic control loop tuning and configuration
- Valuable preventative maintenance and asset management information
- Logs system events and data to a compact memory card
- Enabled for remote monitoring and data access via local network or Internet
- Two-level password protection
- Multilingual support



CCC Worldwide Technical Services

- Start-up and onsite consulting
- 24/7 technical support
- Remote monitoring and diagnostics
- Engineering services
- Operator and maintenance training
- Onsite system auditing

Controller Specifications

TECHNICAL

- Input power 85 to 265 VAC
- Isolated I/O with easily replaceable conditioning modules
 - 22 high resolution analog inputs
 - 16 discrete inputs
 - 6 analog outputs (two standard)
 - 14 discrete outputs
 - 1 magnetic pickup input (for turbine drives)
- Five (5) serial communication ports
- 32-bit microprocessor
- 5 ms I/O sampling cycle
- Multitasking operating system
- Non-volatile memory for configuration storage
- Time stamping of alarms and events

ENVIRONMENTAL

- Operating temperature range from -20 to 70°C (from -4 to 158°F)
- Humidity 5 to 95 percent (non-condensing)



Analog I/O



Digital Outputs



Digital Inputs

Optional Instrumentation Packages Supplement the standard control system package with instrumentation for your special needs

- Resistance temperature detector (RTD) elements
- Pressure transducers
- Vibration transmitters with or w/o probes
- Watt or motor current transducer
- Networking package (provides data exchange via a fiber optic link)

Optional Value Packages Take your machinery to even higher level of safety and efficiency

- Flow and Efficiency
- Motor Monitoring
- Filter Monitoring

Application Software

All Air Miser control functions are compliant with IEC 61131-3 international programming standards and based on proven application software algorithms.

In addition to CCC's traditional flow-based surge control and performance control functionality found in the original Air Miser controllers, the new standard **Air Miser® TL turbocompressor unit control system** introduces:

- Choice of either standalone system pressure control or master pressure control
- Surge protection, surge detection and load sharing based on motor power
- Seamless load sharing between flow-based and power-based control systems
- Machine monitoring and protection
- Sequencing logic for the driver-motor and auxiliary equipment

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Standard **monitoring, protection and sequencing functions** include:

- *Vibration monitoring, alarming and trip logic*
- *Monitoring intercooler temperature and discharge pressure on each stage*
- *Electric motor control, monitoring and protection*
- *Lube oil subsystem control, monitoring and trip logic*
- *Cooling subsystem monitoring and control*
- *Seal air pressure interlocking (where applicable)*

Air Miser® ML station master control system complements CCC's traditional master pressure / flow and load sharing control by offering the following options:

- *Letdown valve control to optimize air distribution between two headers*
- *Compressor Network Capacity Management to optimize number of online units*

Optional Air Miser View Human Machine Interface (HMI) Software (Installed on an optional PC workstation)

- Monitors the entire compressor network
- High-speed critical event archiving
- Alarm and event displays
- Real-time trends and data archives with autonomous viewer of historical data and data export into popular file formats
- Tool for creating, printing and e-mailing the periodic reports
- I/O browser
- Compressor map
- OPC servers
- Multilingual support



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www.proconsystems.com

CCC WORLDWIDE

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***Experience the CCC advantage
and discover how much
you can gain
through better turbomachinery
control***

The information contained in this brochure is of general nature. Compressor Controls Corporation reserves the right to modify the designs described herein as deemed necessary by any particular installation.