Atlas Copco Elektronikon® system

State-of-the-art electronic monitoring and control capability

THE BENEFITS
OF ADVANCED
TECHNOLOGY

Atlas Copco

Efficient compressor operation

In order to derive full benefit from your compressed air system, you need to be assured that your compressor is inherently dependable.

The comprehensive line of Atlas Copco compressors truly matches all your needs. These compressors represent the state-of-the-art in reliability, featuring Atlas Copco's patented Elektronikon® system, an advanced electronic monitoring and control capability.

Simple

One technology for all your Atlas Copco equipment to:

- **control**
- **monitor**
- **protect**

Comprehensive

Many years of compressor regulation experience culminated in the ultimate regulator platform:

- **one hardware platform for Atlas Copco compressors and many dryer types**
- **optimized for compressed air equipment monitoring and control**
- **robust hardware for demanding compressor conditions**
- **LAN port (*) is standard for easy networking of compressor room equipment: no interface required**

Expandable

The Atlas Copco Elektronikon® system can easily be expanded with extra sensors, digital inputs or Fieldbus communication tailored to your specific application:

- **analogue input modules**
- **digital input/output module**
- **internet communication**
- **fieldbus communication**

(*) not on Elektronikon I

Turning technology into profit

Besides easy-to-use start/stop buttons, activating optimal procedures to start or stop your compressor, the Elektronikon® offers many additional features with a few keystrokes.

CHARACTERISTIC	FEATURES	BENEFITS
Pressure regulation.	Fast, easy and accurate programming of the required pressure band.	Narrow pressure band for optimum energy use.
Programming start/stop of the compressor or pressure bands.	Start and stop of the compressor can be programmed for various times during the week.	No unplanned running periods, easy switch of bands.
Delayed second stop.	Electronically controlled load / no load /stop regulation.	Saves energy. Reduces compressor run time to an absolute minimum.
Electronic monitoring	Sensors at all key locations on the compressor.	Provides optimized information on operating conditon.
Registration of running conditions.	Records the load and no load run time as well as the function of the compressor.	Complete information of the operating status of the compressor
Retrieving of data.	Monitoring of service intervals. Stores all available data at emergency stop or shut down.	Efficient maintenance scheduling. Fast detection of causes of faults to simplify correction
Pre-warning indication	Notifies an operator in advance of machine conditions deviating from specification.	Pe-emptive actions can be taken to prevent breakdown.
Shutdown indication	Notifies an operator that the machine has been shutdown due to a protection setting.	Easy troubleshooting and rectification of faults.
Service warning	Notifies an operator that service is required or needs to be planned.	Increases the operating efficiency of the compressor insuring maintenance is done properly.
Remote control (standard).	Digital remote control.	Centralised compressor control.
Relay monitoring (standard).	Digital remote monitoring.	Remote indication of status.
Automatic restart.	Programmable restart after voltage failure.	Maximum availability of your compressor. No loss of compressed air.
MCC (optional).	Multiple Compressor Control. Function can be configured in one compressor in an installation.	Allows one regulator to act as a master controller to sequence compressors in an installation.
Remote monitoring (optional).	Modbus and Profibus are among the standard communication protocols supported for the Elektronikon®.	Remote monitoring using your plant's DCS allows you to incorporate the compressor into your plant management system.

Elektronikon®I

a control, regulation and monitoring system for GA Pack and GA5-11C compressors

Elektronikon®II

a control, regulation and monitoring system for GA11-90C WorkPlace and GA VSD compressors

CONTROL AND

Compressor status indications
- voltage on
- automatic operation
- compressor loaded/unloaded
- maximum allowed unload pressure compressor

Temperature read out
- compressor element outlet
- dewpoint [1]

Hour meters
- total running hours
- total loaded hours
- service timer

Main screen display
- operating status
- delivery air pressure

Pressure, numerical read out
- delivery air

Compressor controls
- start/stop
- load/unload
- emergency stop
- reset
- transition between local/remote compressor control

Compressor status indications
- voltage on
- automatic operation
- compressor loaded
- compressor unloaded
- maximum allowed unload pressure

Hour meters
- total running hours
- total loaded hours
- regulator hours

Timer
- programmable start/stop timer
- programmable time based switch over between pressure sets

Temperature, numerical read out
- compressor element outlet
- dewpoint [1]
- energy recovery water [2]
- cooling water in [3]
- cooling water out [3]

SERVICE AND

Service requirements indications
- service timer
  - air filter
  - oil filter
  - air/oil separator element
  - oil lifetime

Compressor warning indications
- high compressor element outlet temperature
- high dewpoint temperature [1]
- service timer

Compressor shutdown indications
- high compressor element outlet temperature
- drive/fan motor overload
- emergency stop

Service requirements indications
- service plan notification
  - air filter
  - oil filter
  - air/oil separator element
  - oil lifetime
  - regreasing of drive motor
- air/oil separator element [5]
- sensor error

Compressor warning indications
- high compressor element outlet temperature
- high dewpoint temperature [1]

REMOTE CONTROL

Digital input commands
- start/stop
- emergency stop

Digital output compressor status
- general shutdown

Digital input commands
- start/stop
- emergency stop
- load/unload
- pressure set selection

[1] full feature units

[1] full feature units only - [2] optional - [3] water-cooled units
[6] air-cooled units

Elektronikon®III

a control, regulation and monitoring system for Z, GA > 90C, GR and ZH compressors

MONITORING FUNCTIONS

Main screen display
- operating status
- delivery air pressure
- drive motor rpm [4]

Pressure numerical read out
- delivery air
- oil separator DP [5]

Compressor controls
- start/stop
- load/unload
- emergency stop
- reset
- transition between local/remote compressor control
- transition between pressure sets
- multiple compressor control [2]

Compressor status indications
- voltage on
- automatic operation
- compressor loaded
- compressor unloaded
- maximum allowed unload pressure

Hour meters
- total running hours
- total loaded hours
- regulator hours

Timer
- programmable start/stop timer
- programmable time based switch over between pressure sets

Main screen display
- operating status
- delivery air pressure
- IGV% open, BOV% closed [9]
- drive motor rpm [2]
- accumulated volume [2]

Temperature, numerical read out
- delivery air
- element out [10]
- HP element in [1, 11]
- oil [1, 7]
- cooling water [5]
- cooling medium [7]
- dew point [6]
- regeneration wet air in IMD [1]

Pressure numerical read out
- delivery air
- oil separator DP [3]
- air filter DP
- oil filter DP [9]
- inter-cooler [1]
- oil [1]
- DP shroud [9]
- DP element [9]
- Element 2 (3) out [9]

Compressor controls
- start/stop
- load/unload
- emergency stop
- reset
- transition between local/remote compressor control
- transition between pressure sets
- multiple compressor control [8]
- auto-dual/CPC control [9]

Vibration numerical read out [9]
- vibration 1, 2, 3

Current numerical read out [9]
- motor current

STATUS INDICATIONS

- high air/oil separator DP [5]
- service plan timer
- high cooling water outlet temperature [3]

Compressor shutdown indications
- high compressor element outlet temperature
- drive motor overload
- fan motor overload [6]
- emergency stop

Service requirements indications
- service plan notification air filter / oil filter / oil demister [9] / oil lifetime / regreasing of drive motor
- air/oil separator element [3]
- sensor error

Compressor warning indications
- high compressor element outlet temperature
- high dewpoint temperature [6]
- high air/oil separator DP [3]
- service plan timer
- high cooling water temperature [3]
- vibration cooler
- high element inlet temperature [1, 9]
- high oil temperature [1]
- low oil pressure [1]
- high inlet filter DP

Compressor shutdown indications
- high compressor element outlet temperature
- vibration
- high elment inlet temperature [1, 9]
- high oil temperature [1]
- low oil pressure [1]
- drive motor overload
- fan motor overload [4]
- emergency stop

AND MONITORING

Digital output compressor status
- automatic operation
- general shutdown
- general warning

Digital input commands
- start/stop
- emergency stop
- load/unload
- pressure set selection

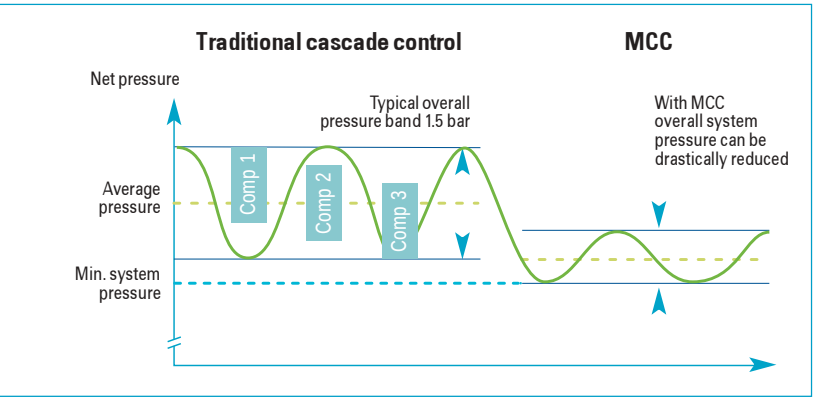
Digital output compressor status
- automatic operation
- general shutdown
- general warning
- load/unload [7]

- [4] VSD compressors - [5] GA > 55 and VSD

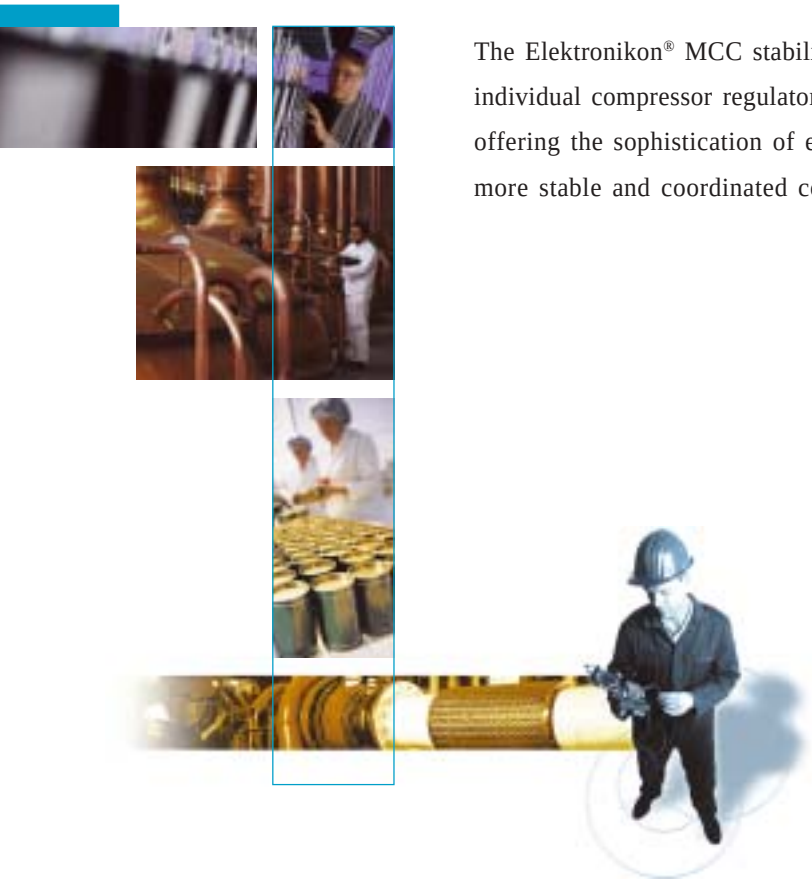
[1] Z compressors only - [2] only for VSD - [3] only for GA/GR - [4] air-cooled units - [5] water-cooled units
[6] full feature units - [7] not on Z < 55 kW - [8] option - [9] ZH compressors only - [10] not on ZH compressors - [11] not on ZE/ZA compressors

Multiple Compressor Control built-in

Each Elektronikon® has the unique MCC, Multiple Compressor Control, built-in. MCC efficiently coordinates individual regulators in a multiple compressor installation, in this way reducing the overall system operating pressure, increasing system pressure stability and optimising maintenance scheduling.
All this results in considerable savings on the operation of your compressed air plant.



The Elektronikon® MCC offers a significant opportunity to reduce the overall system pressure band in comparison with traditional cascaded compressor control. Every 1 bar reduction of the average system pressure stands for 7% energy savings. Losses of compressed air due to system leakage are reduced with 13%. These two factors can account for overall energy savings of 10% over the lifetime of your compressors.



The Elektronikon® MCC stabilises the air supply through coordinating the control of individual compressor regulators. By lowering the overall system pressure band and offering the sophistication of electronic decision making, the MCC offers an inherently more stable and coordinated control algorithm for multiple compressor installations.

The Elektronikon® MCC also allows optimised maintenance scheduling in a multiple compressor installation. The MCC ensures that the installed compressors wear evenly so that necessary maintenance can easily be planned and executed, in this way preventing costly downtime of your process.
Regular service at correct intervals will actually save you money over the lifetime of the compressor installation.

Simple, flexible and comprehensive networking

Plant management system integration

The Elektronikon® regulator integrates easily into your existing plant management system by applying one of our protocol conversion modules. Through a single fieldbus cable, all data observable on the Elektronikon® can instantly be added to your plant's DCS, Distributed Control System. We support the standard commercial protocols Modbus, Profibus and Ethernet. Only one protocol conversion module, called ComBox, is required per installation.

Peace of mind through professional care

Participate in one of Atlas Copco's varied Service agreements and you can be assured of an efficiently operating compressed air system 24/7. The truly unique AIRmonitor system allows our service organisation to supervise your com pressed air system, warn you and take preventive action to avoid costly process downtime. Pre-emptive attention through using the AIRmonitor system will increase the overall efficiency of your compressed air system, expand the expected lifetime of the Atlas Copco equipment and most importantly save you money.

You can tailor specific plans to address your plant's needs: from simple monitoring and preventive maintenance to complete responsibility over your entire compressed air system by highly trained Atlas Copco service engineers. Contact your local Atlas Copco representative today to learn more about how we can serve you better.

The face of innovation

What sets Atlas Copco apart as a company is our conviction that we can only excel in what we do if we provide the best possible know-how and technology to really help our customers produce, grow and succeed.

There is a unique way of achieving that - we simply call it the Atlas Copco way. It builds on **interaction**, on long-term relationships and involvement in the customers' process, needs and objectives. It means having the flexibility to adapt to the diverse demands of the people we cater for.

It's the **commitment** to our customers' business that drives our effort towards increasing their productivity through better solutions. It starts with fully supporting existing products and continuously doing things better, but it goes much further, creating advances in technology through **innovation**. Not for the sake of technology, but for the sake of our customer's bottom line and peace-of-mind.

That is how Atlas Copco will strive to remain the first choice, to succeed in attracting new business and to maintain our position as the industry leader.

ISO 9001
From design to production and delivery of compressors, Atlas Copco adheres to the ISO 9001 management system.

ISO 14001
Atlas Copco's Environmental Management System forms an integral part of each business process.

Never use compressed air as breathing air without prior purification in accordance with local legislation and standards.

Atlas Copco

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