



MANAGEMENT CONTROLLERS EXPANSION AND SOFTWARE

ENERCON "S" SERIES CONTROLLERS

The central element of EnerAir's Enercon Energy Management System is the system controller. The Enercon "S" series is a specialised supervisory and control unit designed to provide sequence management of up to 12 (5 - SX5 & 8 - SX8, or 12 via RS485 connection) air compressors under optimised pressure control. The flexibility of the Enercon "S" series, and its range of interfaces, means that most types of compressors can be controlled, including rotary screw, vane and reciprocating types, the latter in both multi-step and variable speed configurations.

Using microprocessor control, high accuracy electronic detection and single pressure band control philosophy, the Enercon S series controllers offer a range of intelligent control options to optimise the system characteristics and reduce the energy costs associated with compressed air systems. These options are described as follows:

Pressure Optimisation

Pressure optimisation has a dramatic effect on overall system efficiency. As an example: a 0.5 bar decrease in the operating pressure of a system will produce a 5.25% reduction in the overall cost of electricity consumed by the system.

Control Optimisation

Demand matched compressor selection ensures that the most efficient compressors are employed. In addition, the ability to customise sequence selection and fine tune system operating pressure means that further significant operational cost reductions are achieved.

Leakage Optimisation

By allowing the user to pre-set system operating times and/or air system pressure and demand changes, the Enercon "S" series cuts unnecessary wastage/leakage costs.



ADDITIONAL OPERATING FACILITIES OFFERED BY THE ENERCON "S" SERIES INCLUDE:

Maximum Efficiency mode:

This operation mode is suited to installations with compressors of different capacities operating with a variety of system characteristics. The Enercon "S" series will select the most efficient combination of compressor capacities to suit a given demand.

Equalised Running Hours:

The Enercon can be set to sequence each compressor so that the running hours of all compressors in the system are similar over a period of time. Routine maintenance can then be synchronised.

Priority Settings:

When operating in the standard sequence rotation mode each compressor can be assigned a sequence priority, which will modify the sequence selection order. Priority can be used to achieve maximum efficiency of compressors, which have different capacities or where a particular compressor or number of compressors needs to follow a different strategy from the normal sequence.

ENERCON "S" SERIES - SYSTEM COMPONENTS

SYSTEM EXPANSION MODULES

The standard Monitoring, Control & Optimisation capabilities of the Enercon "S" Series controllers are expandable, via system expansion modules (or I/O), to additional compressed air equipment, including compressed air filters, dryers, water pumps and cooling fans. This facility ensures total air system automated monitoring, control & optimisation.

Filtration:

By monitoring line filter pressure drop and calculating the optimum point at which the line filter element should be replaced, the user is ensuring that increased energy costs associated with line filter element degradation and the resulting pressure drops are avoided.

Drying:

Similarly, by monitoring pressure drop across air-drying equipment, costly pressure drops can be avoided. Additional savings can also be gained from the use of EnerAir's unique AX module. The Ax is a switching module which takes range information, such as pressure, dewpoint and temperature (etc.), and drives a device based upon the data received. It is in effect a retrofit dewpoint dependent switching system that derives additional efficiency improvements from a system, especially when used with equipment such as desiccant dryers.

Air treatment system:

In addition to condition monitoring and single point pressure drop monitoring, the user can also monitor pressure drop across the entire air treatment system to gain an understanding of total compressed air treatment operating costs.

Other associated compressed air equipment:

Similarly, S Series expansion can include condition monitoring of supporting compressor house equipment such as water pumps and fans etc...

ENERCON "S" SERIES - SYSTEM COMPONENTS

Enersoft Control, Monitoring & Visualisation Software

Enersoft is a PC based software package for Enercon "S" Series Controllers. Together with PC visualisation capabilities, Enersoft is able to provide a complete compressed air supervisory monitoring, control & optimisation solution. The software enables plant supervisors to remotely monitor & routinely review system performance, identifying and implementing operational cost reductions and quality improvements direct from the PC screen: - The comprehensive list of facilities provided by Enersoft includes:

Monitoring and Analysis:	Control, Automation and Optimisation:
System status	Manual Control
System performance	Production matched runtime scheduling
Warning and fault detection	System pressure optimisation
Leakage Monitoring	Intelligent utility management
Air filter performance monitoring	Routine maintenance planning
	Air filter element renewal

