

# Performance and Efficiency

Compressed air management system



Superior control solutions

## SmartAir Master Plus

# Efficiency. Performance. Monitoring.

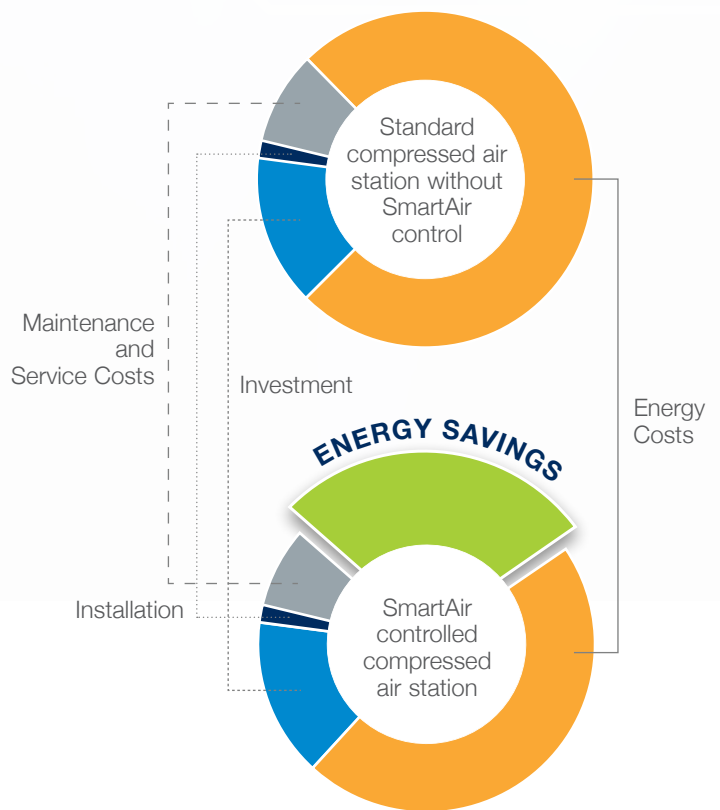
## Great energy saving potential

Energy management is crucial for all compressed air users, as the highest cost factor of a compressor is the energy to run it. Over a period of five years, energy accounts for roughly 90% of the total costs.

However, this high percentage of energy use also means that there is potential for high cost savings.

Compressed air systems typically comprise of multiple compressors delivering air to a common distribution system. The combined capacity of those machines is generally greater than the maximum site demand.

With CompAir's advanced demand responsive sequencer SmartAir Master Plus, the efficiency of compressor stations with up to twelve compressors including downstream equipment can be maximised. Apart from the energy savings, the compressed air management system also contributes to decreased downtime, optimum performance, service and monitoring and ultimately leads to increased plant productivity.



Up to 35% energy savings can be achieved by implementing a central SmartAir Master Plus multi compressor controller.



## A profitable investment

- Harmonises the workload of up to 12 fixed or regulated speed compressors
- Eliminates energy waste by tightening the network pressure to the narrowest pressure band
- Equalises the running hours for economic servicing and increased uptime

“ Every 1 bar pressure reduction in the system reduces the energy consumption by about 7%.



## The powerful control tool

The touchscreen display allows plant managers a comprehensive overview of the complete system including downstream equipment to help improve the complete network performance.

A modern set-up assistant guarantees a short set-up time by guiding the user through the process.\* All input parameters are individually confirmed ensuring each setting is correct.

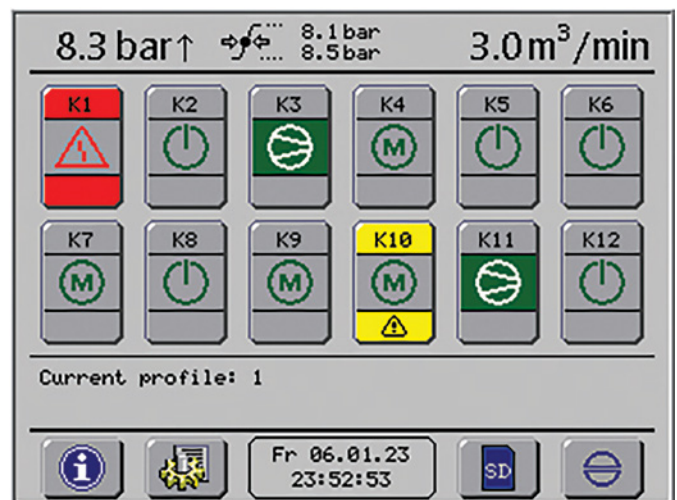
The additional help function gives access to connection diagrams and controller settings.

## Convenient operation

CompAir's state-of-the-art SmartAir Master Plus compressed air management system has been designed and developed with focus on operator convenience and ease of installation. Thanks to the graphical presentation, the sequencer is very user-friendly and is operated via the intuitive touch-screen panel. The home page gives a clear overview of the compressed air station.

- Network pressure, pressure range and compressed air consumption
- Individual status display of each compressor connected
- Fault and warning message for each compressor listed along with the exact time and date in plain text fault memory
- Operating and load hours of every individual compressor

\*Up to 17 language settings available



# In-depth control, detailed monitoring



## Versatile control functions

The SmartAir Master Plus sequencer calculates the system demand and selects the most suitable compressor combination to meet exactly the plant requirements, which in turn offers significant energy savings.

Unlike conventional control systems, further equipment such as dryers, filters and condensate drains can be included, ensuring the complete compressed air system works at optimum performance.

All performance characteristics are logged on the integrated SD card providing further analysis options of the system performance.

## Characteristics of each compressor

8.3 bar	8.5 bar 8.1 bar	9.0 m <sup>3</sup> /min
<b>Parameters compressor 1</b>		
Control:	DELCOs 3100-LRS	
Current priority:	Norm	
Total hours:	54206 h	
Loaded hours:	52025 h	
FAD max.:	9.0 m <sup>3</sup> /min	
FAD cur.:	7.3 m <sup>3</sup> /min	
FAD min.:	3.0 m <sup>3</sup> /min	
Final temperature:	41 °C	
Final pressure:	8.8 bar	
Line press. at compressor:	8.5 bar	
<div style="display: flex; justify-content: space-between;"> <span>&lt; Back</span> <span>Events</span> <span>Service on</span> </div>		

## Diagram display

8.3 bar	8.5 bar 8.1 bar	8.9 m <sup>3</sup> /min
<b>Line pressure 1</b>		
10.0	8.3 [bar]	
5.0	16:06	
300s		
16:11		
<div style="display: flex; justify-content: space-between;"> <span>&lt; Back</span> <span>◀</span> <span>▶</span> </div>		



# The power of visualisation

## Remote monitoring and visualisation

Several options are available for system data to be viewed at remote locations including the internet.

### SmartAir Master Plus Connectivity

- 1** The complete air installation can be monitored via field bus. These features include warning indication, compressor shutdown warning and maintenance scheduling. An easy connection to a Profibus or ModBus-RTU network is ensured.
- 2** Webserver Light function included as a standard, unlimited number of users can access the online visual display system via the optional webserver module without any loss in speed. The users can visualise selected data of the compressor system via PC or smart device.
- 3** Modbus-TCP - Via an ethernet port which supports Modbus-TCP protocol, the complete compressed air installation can be visualised. Webserver full module provided in MK200 format, with future proofed HTML5 software that supports TLS1.3 for email exchange and allows for extra functionality such as:
  - User defined profile names
  - Creating statistic data
  - Creating and downloading of pdf files for statistical data
  - Input of energy tariff (€/kWh) to calculate energy costs
  - User defined compressor data - name - rated, idle and full load power
  - Sending email in case of warnings or faults and statistics



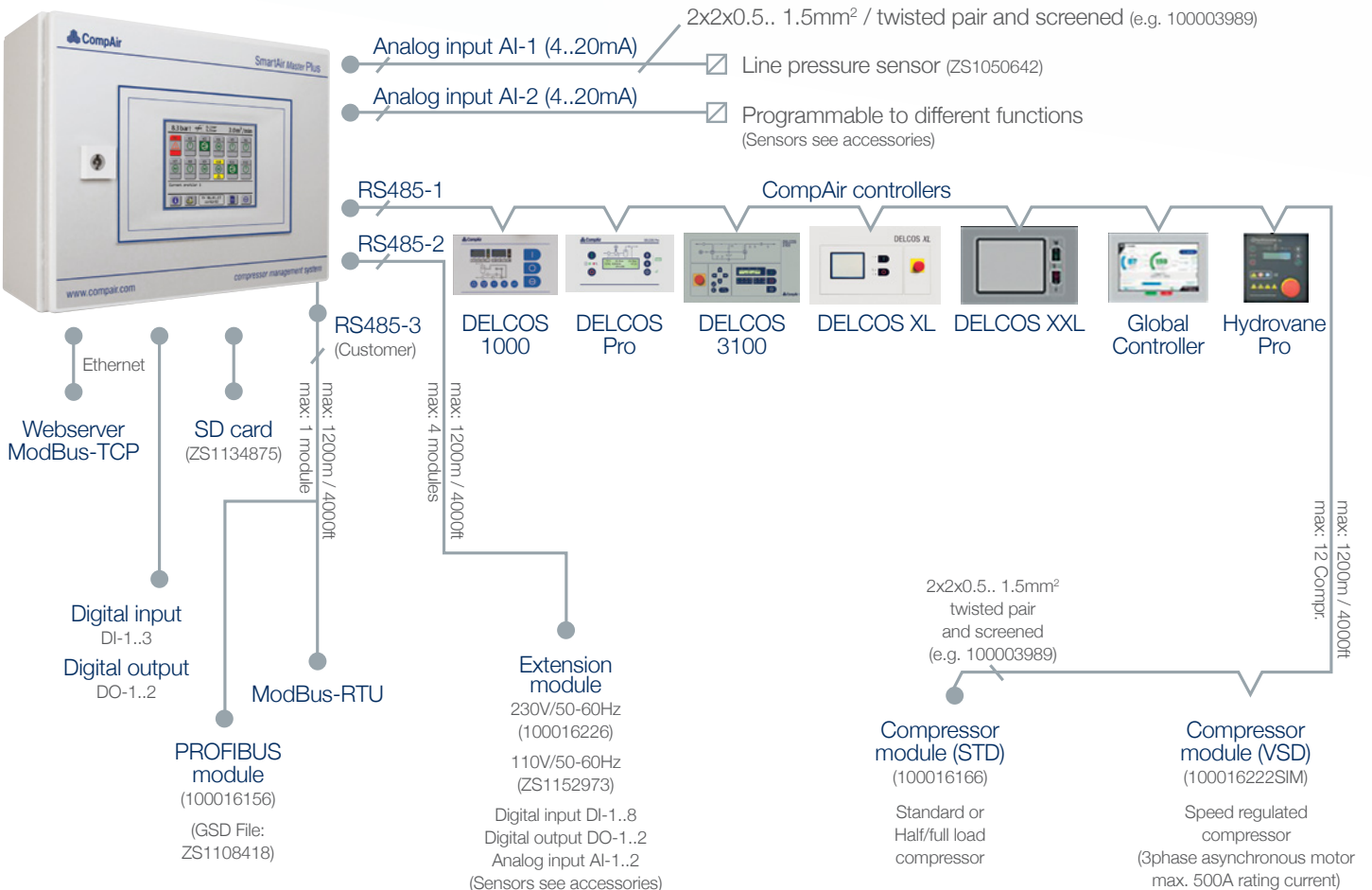
# Economic control solution

## Advanced Microprocessor Technology

Safe and fast exchange of large amounts of data is ensured by large memory capacity using the latest microprocessor technology.

- Easy installation
- Low investment costs
- Up to 35% energy savings
- Reduced downtime
- User-friendly operation
- Detailed management reports
- All CompAir controllers can be connected without extra hardware

## SmartAir Master Plus connectivity





## CompAir SmartAir Master Plus

### Technical Data



Electrical connection	
System	1~/N/PE
Voltage	110/230V +/-10% 50/60 Hz
Display	
Type	Colour graphics display with touch function
Screen Size	5, 7"
Interfaces	
Analogue inputs	2
Digital inputs	3
Relay outputs	2
Memory card	
Type	SD card
Connection for compressors	
Quantity	max. 12 compressors
Interface	RS485
Distance from SmartAir Master Plus	max. 1200m
Customer interface	
Interface	RS485
Distance from SmartAir Master Plus	max. 1200m
Protocol	ModBus-RTU or PROFIBUS (optional)
Permissible ambient temperatures	
Operations	0 to 55°C
Storage	-25 to 75°C

EMC Conformity	
Emissions	DIN EN 61000-6-3
Interface suppression	DIN EN 61000-6-2
Housing	
Dimensions (W x H x D)	380 x 300 x 155 mm
Design	Steel plate housing
Type of protection	IP54
Weight	11kg
Scope of supply	
<ul style="list-style-type: none"> <li>- SmartAir Master Plus including cable glands</li> <li>- Network pressure sensor</li> <li>- Set of plugs for connecting to compressor controllers</li> <li>- SD card</li> <li>- Documentation</li> </ul>	
Options	
Compressor module (STD)	For connecting fixed speed compressors
Compressor module (VSD)	For connecting variable speed compressors
Extension module	For extending the programmable inputs / outputs
PROFIBUS module	For connection to a PROFIBUS network
Webserver module	For visualising via Ethernet
Volume flow sensor (kit)	Consumption sensor with display for measurement of compressed air indicating the actual consumption in m³/h
Dew point sensor (4..20mA)	Dewpoint transmitter for low dewpoint applications down to -80°C

# Innovation & Engineering Excellence



A leading global manufacturer of a wide range of world-class compressed air solutions, CompAir is dedicated to providing a complete solution for our industry partners. From the latest advances in oil-free and oil-lubricated technologies to a complete range of downstream equipment, air treatment and accessories.

An extensive network of dedicated CompAir sales companies and premium partners across all continents provide global expertise with a truly local service, ensuring our advanced technology is backed up with the right support.

CompAir has consistently been at the forefront of compressed air systems development, culminating in some of the most energy efficient and low environmental impact compressors on the market today, helping customers achieve or surpass their sustainability targets.

## CompAir compressed air product range

### Advanced Compressor Technology Lubricated

- Rotary Screw
  - > Fixed and Regulated Speed
- Portable

### Oil-Free

- Water Injected Screw
  - > Fixed and Regulated Speed
- Two Stage Screw
  - > Fixed and Regulated Speed
- Rotary Scroll
- Ultima®

### Complete Air Treatment Range

- Filter
- Refrigerant and Desiccant Dryer
- Condensate Management
- Heat of Compression Dryer
- Nitrogen Generator

### Modern Control Systems

- CompAir DELCOS Controllers
- SmartAir Master Plus Sequencer
- iConn - Smart Compressor Service

CompAir policy is one of continuous improvement and we therefore reserve the right to alter specifications and prices without prior notice. All products are sold subject to the Company's conditions of sale.

### Value Added Services

- Professional Air Audit
- Performance Reporting
- Leak Detection

### Leading Customer Support

- Custom Engineered Solutions
- Local Service Centres
- Genuine CompAir Parts and Lubricants