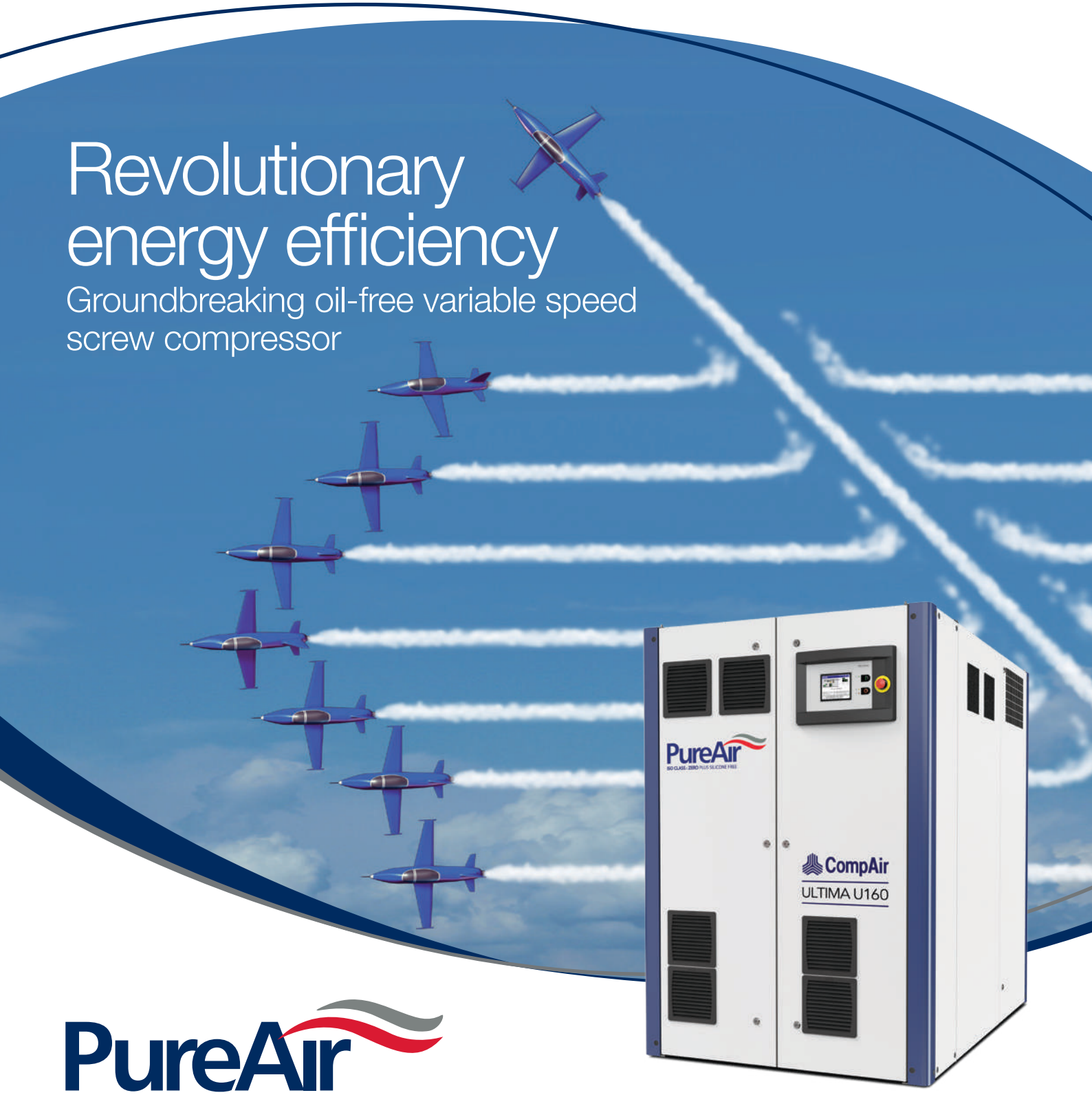
CompAir
by Gardner Denver

Revolutionary energy efficiency

Groundbreaking oil-free variable speed screw compressor



PureAir
ISO CLASS: ZERO PLUS SILICONE FREE

Innovative oil-free
compressed air technologies

Ultima™ U75 – U160
Variable Speed
Air & Water Cooled

Ultima™ redefines efficiency

Ultima™ delivers on every level

Ultima is a groundbreaking oil-free PureAir compressor. The unique design of this all new compressor range from CompAir, utilises a low pressure and high pressure dry screw airend - each airend is individually driven by a variable speed, permanent magnet synchronous motor, offering exceptional levels of efficiency versus traditional oil-free technology. Considering that the highest cost in the lifecycle of a compressor is the energy to run it, the unique design of Ultima has allowed us to combine the ultimate performance with the ultimate efficiency, and still deliver a footprint 37% smaller than a conventional two-stage oil-free compressor.

GERMAN ENGINEERING DESIGN&MANUFACTURE

- **Pressure range**
  4 to 10 bar
- **Volume flow**
  6.7 to 23.3 m³/min
- **Motor power**
  75 to 160 kW

CLASS CERTIFIED

100% oil and silicone-free for clean air critical applications

The Ultima compressors are 100% oil and silicone-free and meet ISO 8573-1 Class Zero (2010), making them the ideal choice for stringent oil-free applications within food and beverage, pharmaceutical, electronic and the automotive industries.

PureAir
ISO CLASS: ZERO PLUS SILICONE FREE

> Delivering significant increases in efficiency and exceeding environmental targets.

Ultima™ – The real deal

The unique patented design delivers numerous benefits to compressed air users:

HIGHEST EFFICIENCY LEVELS
- Up to 13% savings compared to industry standard

OPTIMAL PERFORMANCE AT ANY LOAD
- LP & HP airends individually driven
- No gearbox required

BEST-IN-CLASS FOOTPRINT
- Up to 37% smaller than industry standard

THE QUIETEST COMPRESSOR IN ITS CLASS
- Max 69 db(A) (water cooled) and 70 db (A) (air-cooled)
- Easy installation at point of use

FULL UPGRADABILITY BETWEEN 75KW AND 160KW
- If your demand increases Ultima can be upgraded
- Immediately available, no delivery time, no downtime for installation
- Much cheaper than an investment in a new/ additional compressor

MINIMUM POWER CONSUMPTION IN IDLE LOAD
- Up to -45% compared to industry standard

VERY EFFICIENT HEAT RECOVERY
- 100% recovery of all heat generated by the compressor
- The first air-cooled oil-free compressor that can be used for process heat recovery

OIL AND SILICONE FREE
- Highest level of air quality
- Class 0 certified

EASY INSTALLATION
- No ducting required
- Fits through almost every door

ICONN INDUSTRY 4.0 SOLUTION
- Pro-active maintenance
- Avoid unplanned outages
- Free of charge

iConn by Gardner Denver

MULTIPLE FURTHER OPTIONS TO MEET INDIVIDUAL DEMANDS
- Outdoor variant, HOC connection, U-Cooler and many more…

Ultima™ – truly superior, however you look at it

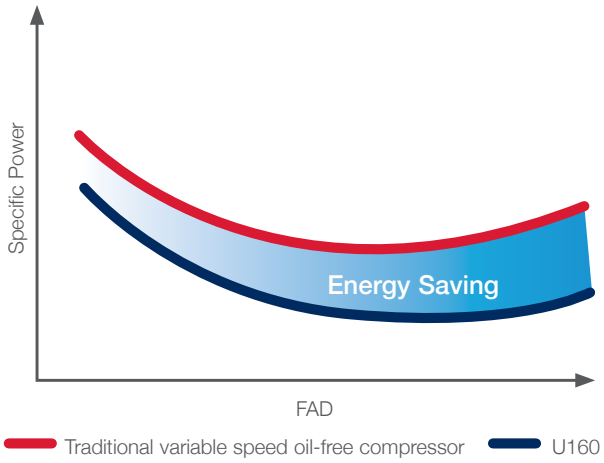
Ultima Water Cooled

The unique drive design

Traditional oil-free compressors are driven by a single motor using a gearbox which in turn, drives both the low and high pressure airends. Gearboxes require oil and create friction which equates to energy loss. Ultima uses ultra high efficiency motors which replace the gearbox and the single motor which optimise performance throughout the complete volume range, as the airends can be driven at different speeds dependant on the demand. With a single motor driving both airends together this is not possible. This is where Ultima is hard to beat.

The Ultima design utilises an intelligent "digital gearbox" design which continuously monitors and independently adjust the speeds of each airend, ensuring maximum efficiency and pressure ratios at all times.

Efficiency - 160kW at 10 bar (g)



Even greater efficiency

When any regulated speed compressor gets to the minimum speed, it goes into idle run. For any compressor, this is wasted energy. Ultima uses 45% less energy in idle run than a conventional two-stage compressor and a 160kW compressor uses less than 8kW in idle run.

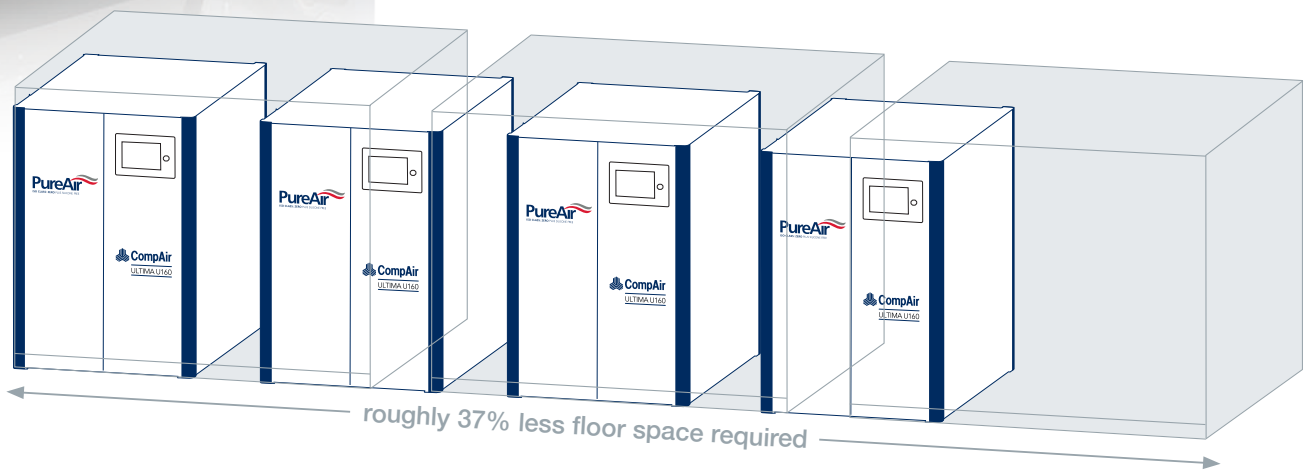
> Highest efficiency levels throughout the life of the compressor.

Premium efficiency airends

Unlike the majority of oil-free airends that quickly succumb to performance degradation, the German engineered and manufactured airends featured in Ultima, use a special coating to ensure maximum efficiency and protection throughout the life of the compressor.

Lowest noise levels

Ultima is extremely quiet. Even the 160 kW models, do not exceed a noise level of 69 dB(A) (water-cooled) and 70 dB(A) (air-cooled). This is by far quieter than any comparable oil-free compressor on the market and a great benefit for customers who would like to operate the compressor at point of use.



Best-in-Class footprint

Ultima requires on average, 3.4 m³ less space (or up to 37% less floor space) than a conventional two-stage oil-free compressor. This allows easy installation in the smallest possible space - not only a benefit where space is limited - it also translates into property cost saving.

Air Cooled with Heat Recovery - The Ultimate Efficiency

Unique cooling

Ultima's **innovative and patented closed package cooling system** allows for the collection and **recovery of up to 98% of the heat** that is generated during the compression process. This energy can be harnessed to provide process water heating, reaching usable water temperatures of up to 85°C.

In fact, **Ultima is the first and only air-cooled, oil-free air compressor on the market, capable of utilising heat recovery** for process water heating.

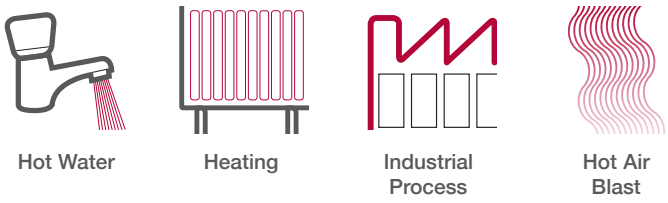
Ultima has the added benefit of **"hybrid cooling mode"** operation. Depending upon the most economic cooling method at the time (eg in the case of seasonally changing availability of cooling water) Ultima can operate in either air-cooled or water-cooled mode or a combination of both concurrently.

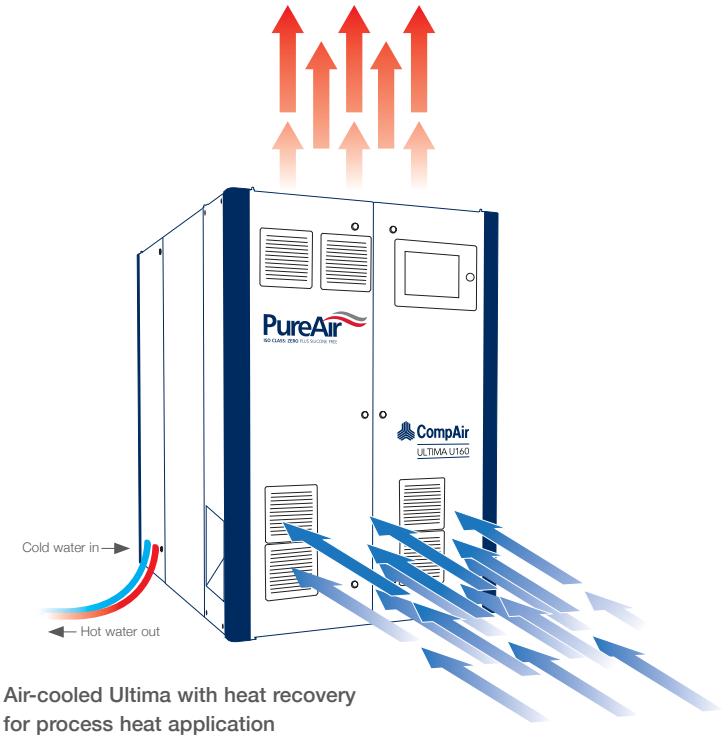
By utilising the superior design of the closed loop water system, Ultima requires no air for internal cooling. Ultima processes cooling air within the compressor and utilising a heat exchanger, cools the internal air, then recirculates it via the base frame around the compressor. This also ensures that no dust or particulate can enter the inside of the compressor.

As a result, installation is made easy with no requirement for ducting, compressor rooms can be kept to the minimum size, noise levels are greatly reduced and machines can be easily installed at point of use.

Integrated heat recovery

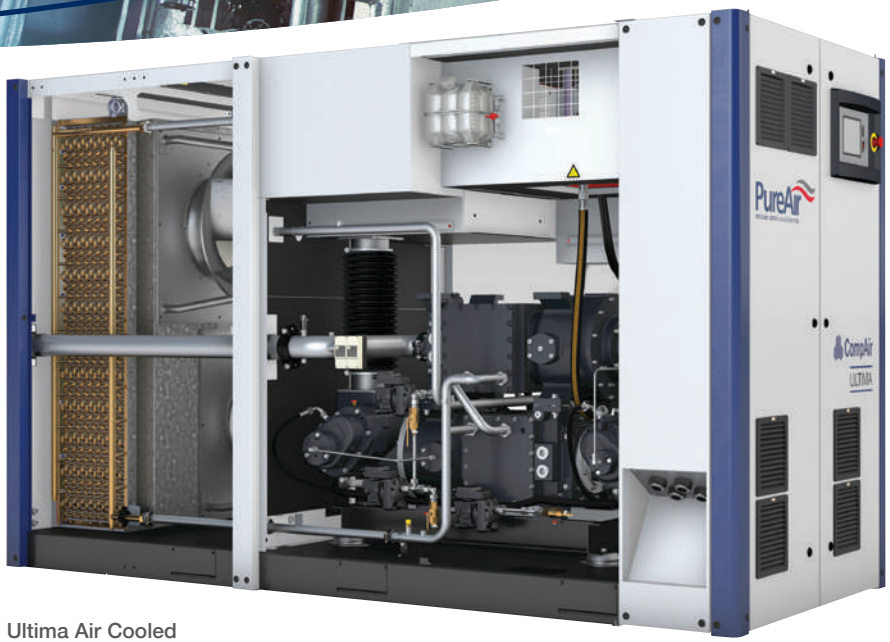
Significant energy and costs savings can be achieved with CompAir's efficient integrated heat recovery system. It can be either factory fitted or supplied as retrofit kit including all necessary pipe-work and fittings.





Air-cooled Ultima with heat recovery for process heat application

AirPlus

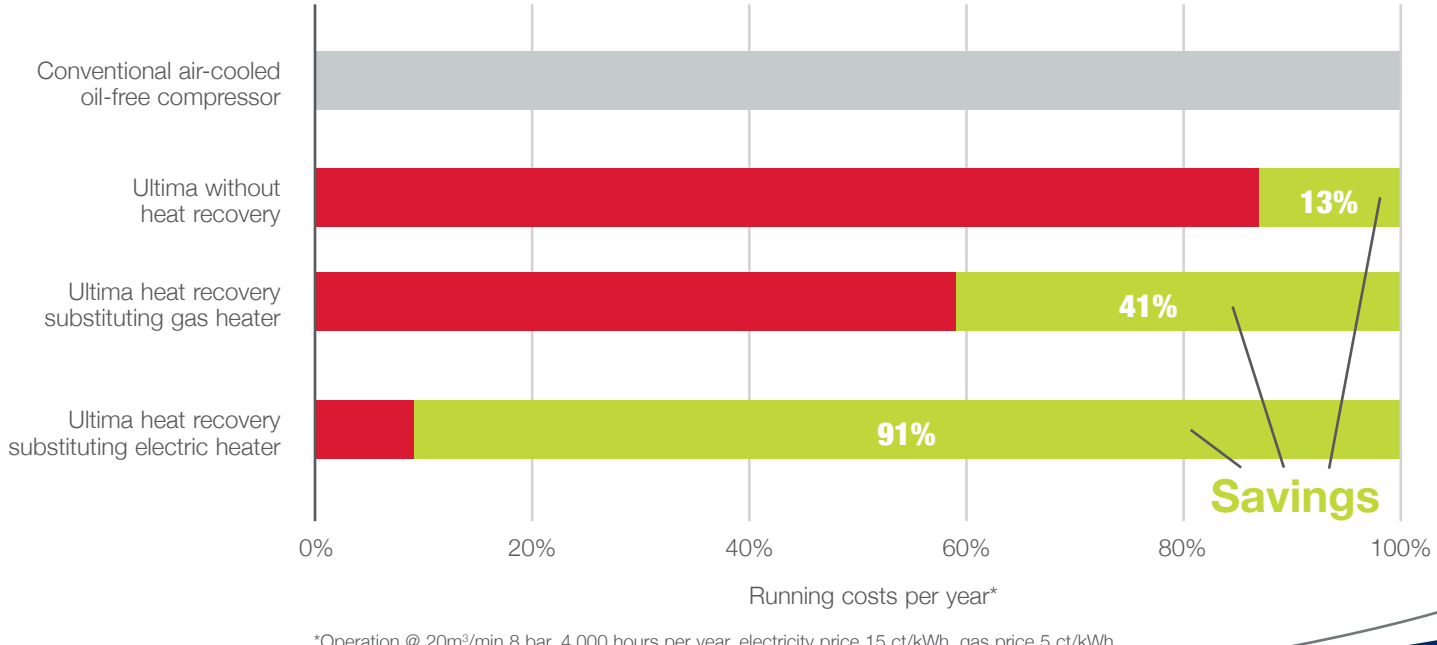


Ultima Air Cooled

Economic Evaluation Heat Recovery

- Almost 100% of the energy spent can be recovered
- Heat Recovery allows up to 91% savings of running costs
- Ultima is the only air-cooled oil-free compressor that allows heat recovery for process heat
- Even without heat recovery, savings compared to industry standard are up to 13%

Comparison of annual running costs



*Operation @ 20m³/min 8 bar, 4.000 hours per year, electricity price 15 ct/kWh, gas price 5 ct/kWh

Ultima™ – driving the perfect compressed air solution

CompAir in Action…

Ground-breaking oil-free Ultima chosen for Saudi Arabia's first independent water and power plant

Shuaibah Water & Electricity Company (SWEC) has selected Gardner Denver's revolutionary new CompAir Ultima compressors to supply oil-free compressed air to Saudi Arabia's first independent water and power plant.

Generating 1,200 MW of electricity and 800,000 m^3/d of water every day, the facility is one of the largest independent water and power plants in the world, supplying to cities including Makkah, Jeddah, Taif and Al-Baha. The Gardner Denver team found SWEC's previous system was not producing the quality or volume of compressed air required, particularly when additional demands such as the plant's ash handling system was factored in too. Furthermore, with traditional oil-free compressors typically over-heating due to the high ambient temperatures in these environments, Gardner Denver recommended its new Ultima technology to help overcome this challenge. As a result, four 160 kW Ultima compressors were specified for the plant, to be used for the site's steam turbine generator, three boilers, auxiliary equipment, flue gas desulphurisation unit and electrostatic precipitators.

"The Ultima compressor offers a high quality, high performance solution that is ideally suited to meet the needs of our plant."

Mohsen Hamed Al Salmi, Technical Director at SWEC

Delcos XXL smart compressor controller

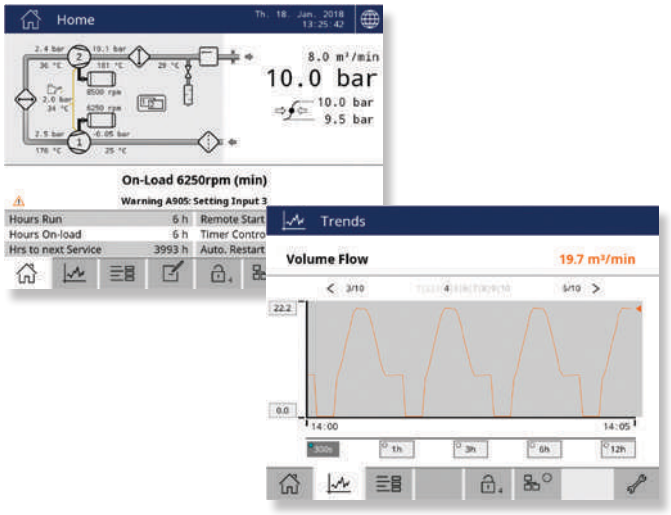
The Delcos XXL with its high resolution 8-inch colour touch screen display, is extremely user-friendly and self-explanatory. All functions are clearly structured in five main menus and are intuitively visual. The multilingual Delcos XXL control system ensures reliable operation and protects your investment by continuously monitoring the operational parameters, essential for reducing your running costs.

Features

- 8,0" graphical touch screen with 800 x 600 pixels
- 5 standard screens
- 5 trend graphs available
- Constant control of all relevant parameters
- Onboard SD card for remote analysis
- Optional Base Load Sequencing
- Interfaces: Modbus (standard), profibus (optional), RS485 interface e.g. for the master control system Smart Air Master

Benefits

- User friendly and intuitive control
- Instant overview of compressor status



Options

- HOC connection
- Canopy stand still heater up to -10°C
- U-Cooler (External cooling module including pump station)
- Outdoor option - weatherproof marine paint C5M, protetcive gratings at air inlet/outlet, roof with 300mm overlap on each side special controller incl. weather protected control panel
- Heat Recovery for air-cooled models
  Integrated heat exchanegr for heat recovery including control of the requested temperature level
- Heat Recovery for water-cooled models
  Integrated control of cooling water outlet temperature (throttle valve with electric actuator and a compact controller for setting the desired temperature)
- Various controller options

CompAir in Action...

Gardner Denver helps Thermo Fisher Scientific meet air purity standards with new Ultima compressor

Global life sciences company, Thermo Fisher Scientific, has invested in a range of new oil-free compressor solutions from Gardner Denver, delivering increased energy efficiencies of more than 30 per cent and predicted cost savings of £12,000 a year.

The company was seeking compressed air solutions that could help meet its demanding air quality requirements for one of its healthcare manufacturing sites. The new compressor technology has been supplied and installed by distributor Pneumatic Solutions Ltd to Thermo Fisher Scientific's manufacturing facility in Newport, South East Wales.

Nick Weed, Sales Director at Pneumatic Solutions Ltd, adds: "Not only were we able to demonstrate the energy efficiency that Ultima offers, but also how flexible the system is. Product lines in the pharmaceutical industry site can vary, which means compressed air demands will not always be constant. The fact that Ultima can quickly adapt to these variations to achieve the highest possible efficiency levels, and low running costs, is a testament to the compressor's capabilities.

"Product lines in the pharmaceutical industry site can vary, which means compressed air demands will not always be constant. Ultima can quickly adapt to these variations."

Nick Weed, Sales Director
at Pneumatic Solutions Ltd

CompAir

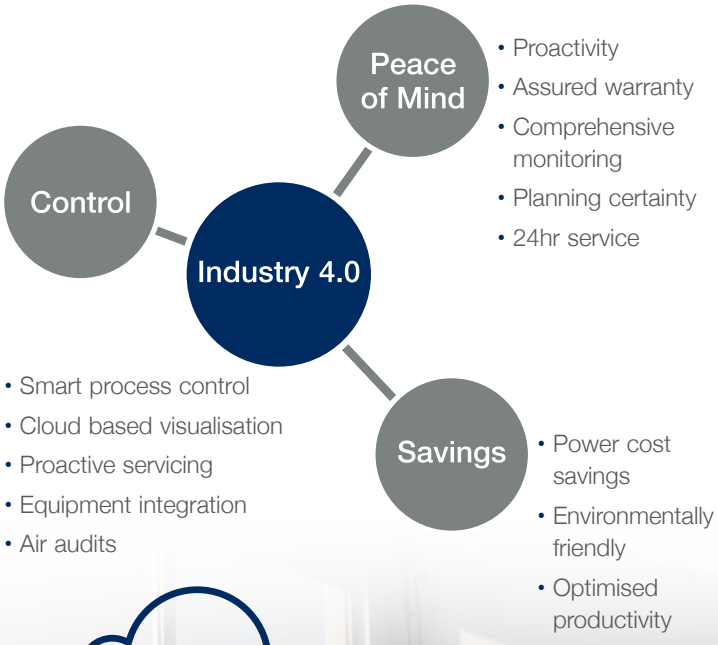
Indu

iConn Industry 4.0 Solution

Ultima, through the controller, is iConn-ready. iConn is the all new and smart, proactive real-time monitoring service that delivers in-depth and real-time knowledge on the system to our compressed air users. It enables accurate production planning and total peace-of-mind protection, generating insight and statistics that keep users informed on performance, at the same time highlighting potential issues before they become a problem.

iConn
by Gardner Denver

Smart Flow Management



Secure iConn Data Management

Open to API's, such as SAP, GE, Oracle, Microsoft

Analytical → Predictive → Cognitive

PureCARE
PUREAIR SERVICING & MAINTENANCE PROGRAMME

Specifically developed to support our oil-free product range, the CompAir PureCARE service programmes go beyond traditional service schemes to ensure uninterrupted quality compressed air supply coupled with optimum compressor performance, giving you peace of mind for your production and budgeting processes.

PureCARE Service plans are delivered by factory-trained CompAir technicians specifically to keep your oil-free compressed air system at peak performance, supported by the unrivalled quality and performance of CompAir genuine parts. Each PureCare Service plan is tailored to your specific application and site circumstances, ensuring system reliability and productivity at optimum cost.

CompAir Ultima™ - Technical Data

Compressor Model	Cooling Method	Working Pressure [bar g]	Drive Motor [kW]	FAD at 8 bar g [1] min - max [m³/min]	FAD at 10 bar g [1] min - max [m³/min]	Noise Level [2] at 100% Load [dB(A)]	Dimensions L x W x H [mm]	Weight [kg]
U75	Air	4 - 10	75	6.7 - 11.9	7.7 - 9.9	64	3244 x 1394 x 1992	3360
	Water					63	2044 x 1394 x 1992	2750
U90	Air	4 - 10	90	6.7 - 14.9	7.7 - 12.7	65	3244 x 1394 x 1992	3360
	Water					64	2044 x 1394 x 1992	2750
U110	Air	4 - 10	110	6.7 - 18.5	7.7 - 16.3	65	3244 x 1394 x 1992	3360
	Water					64	2044 x 1394 x 1992	2750
U132	Air	4 - 10	132	6.7 - 22.2	7.7 - 19.9	67	3244 x 1394 x 1992	3360
	Water					66	2044 x 1394 x 1992	2750
U160	Air	4 - 10	160	6.7 - 23.9	7.7 - 23.6	70	3244 x 1394 x 1992	3360
	Water					69	2044 x 1394 x 1992	2750

[1] Data measured and stated in accordance with ISO 1217, Ed. 4, Annex C & E at the following conditions: Air Intake Pressure: 1 bar a / 14.5 psia, Air Intake Temperature: 20°C / 68°F, Humidity: 0% (dry)

[2] Measured in free field conditions in accordance with the ISO 2151 test code, tolerance ± 3dB(A)

CompAir
by Gardner Denver

Global experience – truly local service

With over 200 years of engineering excellence, the CompAir brand offers an extensive range of highly reliable, energy efficient compressors and accessories to suit all applications.

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

As part of the worldwide Gardner Denver operation, 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
- Piston
- Portable

Oil-Free
- Water Injected Screw
  > Fixed and Regulated Speed
- Two Stage Screw
  > Fixed and Regulated Speed
- Piston
- High Speed Centrifugal - Quantima®
- Rotary Scroll

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 Sequencer
- iConn - Smart Flow Management

Value Added Services
- Professional Air Audit
- Performance Reporting
- Leak Detection

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

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.

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