

# **Gardner Denver**

## Premium compressor design & industry leading warranty

ESM 160 - 290 Fixed Speed  
VS 160 - 290 Variable Speed



Reliability & efficiency  
without compromise



## Where reliability is key

### The ESM and VS Series from Gardner Denver

Well known in the industry for quality and reliability Gardner Denver continuously develops the ESM / VS Series achieving cutting edge performance and efficiency. The new high capacity range ESM / VS 160 - 290 of lubricated screw compressors comprises of fixed speed and variable speed (VS) models. The design focus of these compressors is purely on performance and efficiency. Apart from the premium efficiency airend, several features, such as fixed and variable speed radial fans, have been added to further enhance efficiency and reduce running costs.

- ▶ **Pressure range**  
5 to 13 bar
- ▶ **Volume flow**  
6 to 47 m<sup>3</sup>/min
- ▶ **Motor power**  
160 to 250 kW



### Engineering excellence

Compressors are more than just a financial investment, they are a key component in ensuring that manufacturers, processors and operators receive consistent, high quality, low cost air. The screw compression element is the heart of the compressor and therefore Gardner Denver keeps the design and manufacture in-house, using the latest CNC rotor grinding machinery, coupled with online laser technology. The resulting reliability and performance ensure that operating costs will remain low throughout the compressors life.



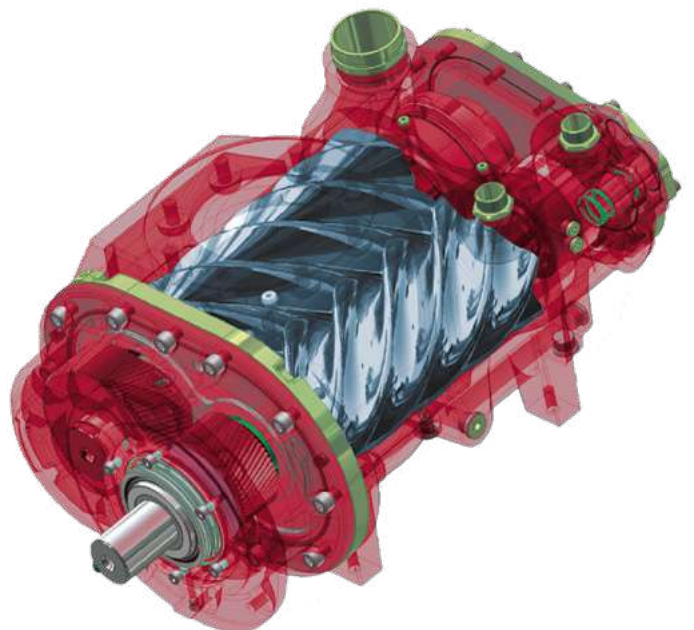


# GERMAN ENGINEERING DESIGN&MANUFACTURE

## Premium efficiency airend

The high-output compression element with slow rotational speed reduces energy costs. In addition, the innovative design of the fail safe shaft seal, integrated oil filter and oil regulation valve, ensures external hoses are reduced to a minimum to guarantee highest levels of quality and reliability are achieved. Under the free Protect 10 warranty the airends are covered up to 44,000 hours or 10 years\*.

\*Whichever is soonest





## Design Concept

### Engineered to perform

#### Large surface after coolers

Optimum cooling of the air and oil circuit is achieved by drawing the coolest possible air onto the coolers from the outside. The coolers are offset and cooled independently by separate radial fans and exhaust chambers which ensures optimum oil temperature and lowest achievable air discharge temperature. This results in longer component life and lower downstream air treatment running costs.

#### High performance separator filter

Two-stage filtration ensures highest quality air is delivered to your air treatment resulting in lower pressure drops and reduced overall system running costs.

#### High efficiency electric motor

Premium efficiency electric motor.



#### Thermostatically controlled radial fans

High efficiency, high thrust, very low noise fans fitted on both air and oil coolers.



#### Automatic motor lubrication

Correct charge of lubricant to the bearings at all times delivers unrivalled reliability and reduced motor life costs.

#### Viton vitaulic couplings

High quality solid hose and pipe connections ensure leak free connections keeping your compressor clean and service friendly.

#### Zero loss autodrain

Fitted to the air aftercooler to remove bulk water allowing greater flexibility of installation options.

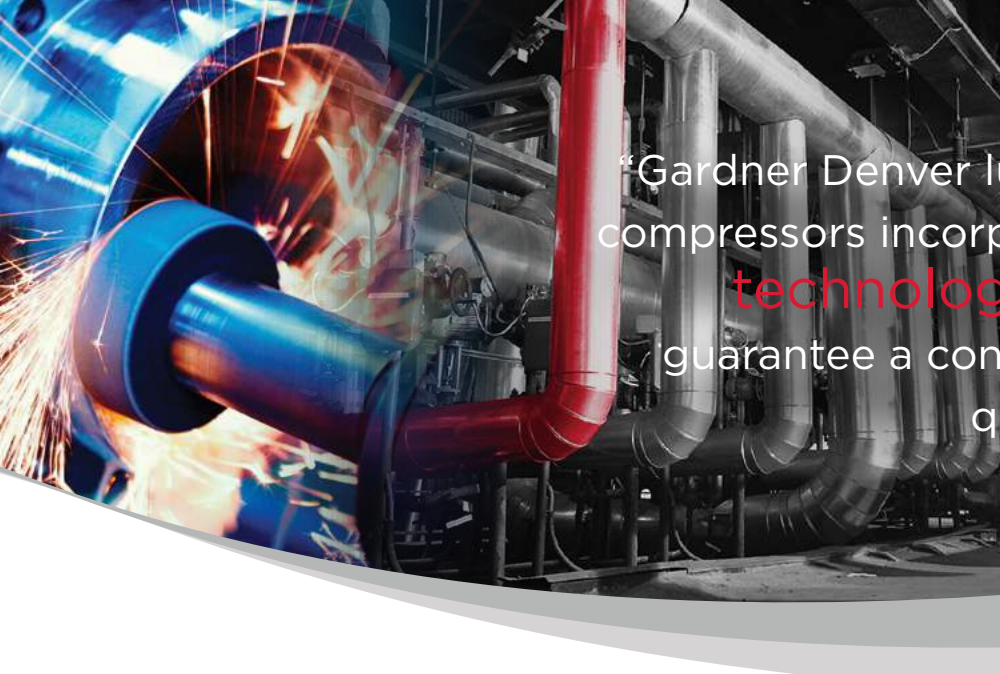


The synthetic efficiency advantage with Gardner Denver AEON™ 9000 SP lubricant as a standard.

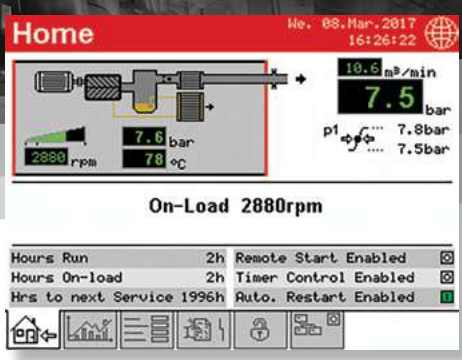
A unique synthetic lubricant designed specifically to maximise compressor efficiency and provide optimum lubricity.

#### Extended life time

Maximum protection for internal components.



“Gardner Denver lubricated rotary screw compressors incorporate the very **latest technological advances** and guarantee a continuous supply of high quality compressed air.”



## GD Pilot TS **innovative touch screen** compressor controller

The GD Pilot TS with its high resolution 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 GD Pilot TS control system ensures reliable operation and protects your investment by continuously monitoring the operational parameters, which is essential for reducing your running costs.

### iConn Industry 4.0 solution

The ESM / VS Series is equipped with iConn as a standard. iConn is the 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.

- Condition based monitoring
- Predictive maintenance required
- Full air manufacturing control optimisation
- External data pattern integration

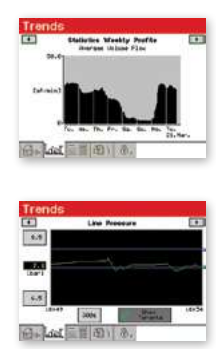
### Features & functions

- Home Page – instant overview of the compressor status
- Real Time Clock – allows pre-setting of compressor starting/stopping
- Second Pressure Setting
- Integrated Cooling and Dryer Control
- Fault History Log – for in-depth analysis
- Remote Control via Programmable Inputs
- Auto Restart after Power Failure
- Optional Base Load Sequencing
- SD Card – stores several run characteristics

### Trend diagrams

With the ability to display detailed system analysis in the form of trend diagrams and graphs, operating parameters can be precisely set to maximise efficiency.

- Line / Network Pressure
- Motor Speed (Variable Speed)
- On Load Hours / Total Hours Run & Average Volume Flow
- Weekly Average Volume Flow





# Variable Speed Compressors

## The perfect response to individual air demands

Variable speed compressors from Gardner Denver can efficiently and reliably handle the varying air demand found in most plant air systems.

The annual cost of ownership can be significantly reduced using variable speed technology.

## Tried and tested inverter concept

- Integrated in the electric cabinet
- Protected from dust by replaceable inlet filters
- Maximum reliability from optimised cooling system
- Ensures high availability and long-life

## Regulated speed radial fan

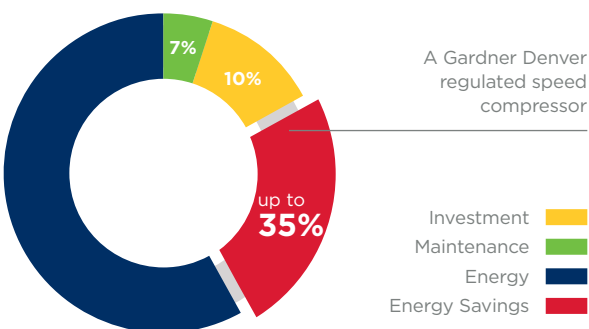
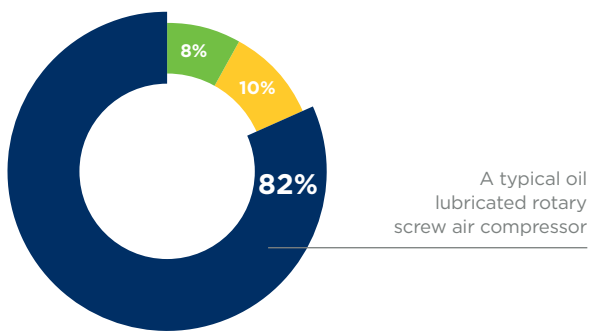
This range can be optionally equipped with inverter driven radial fan on the oil after cooler.

- Optimises oil temperature regulation
- Saves energy costs

## Gardner Denver VS features are your benefits

The VS Series products are designed to obtain the greatest efficiency across the entire operating range

- **Wide regulation range**  
No cycles means substantial energy savings
- **Perfect motor - drive - airend design**  
High efficiency across broad flow range



Investment ■  
 Maintenance ■  
 Energy ■  
 Energy Savings ■

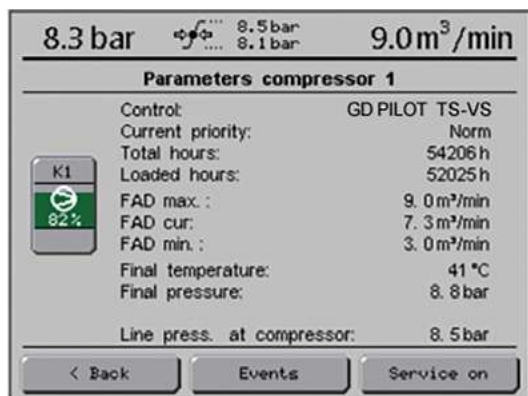


# GD Connect 12 Plus compressed air management system

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 typically 80% of the total costs. 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 Gardner Denver's advanced demand responsive sequencer GD Connect 12 Plus, the efficiency of the 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 and monitoring, and ultimately leads to increased plant productivity.

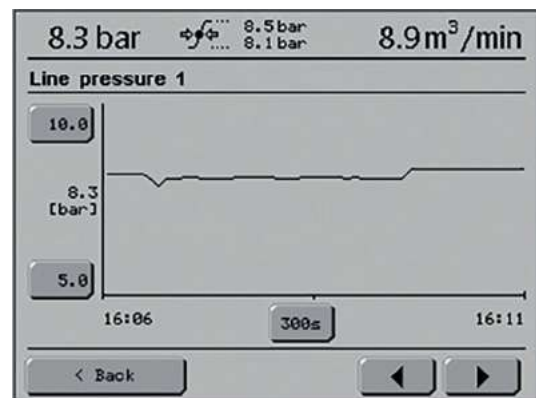
## Characteristics of each compressor



## 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

## Diagram display





## How to add further value

### Heat recovery

The heat generated during compression is paid for as part of the process, then paid for again during removal by way of cooling fans. Instead of simply removing the heat, it can be used to generate free hot process water or hot water heating systems by utilising a high efficiency, factory fitted oil to water heat exchanger.

### Upgrade your compressed air system with heat recovery

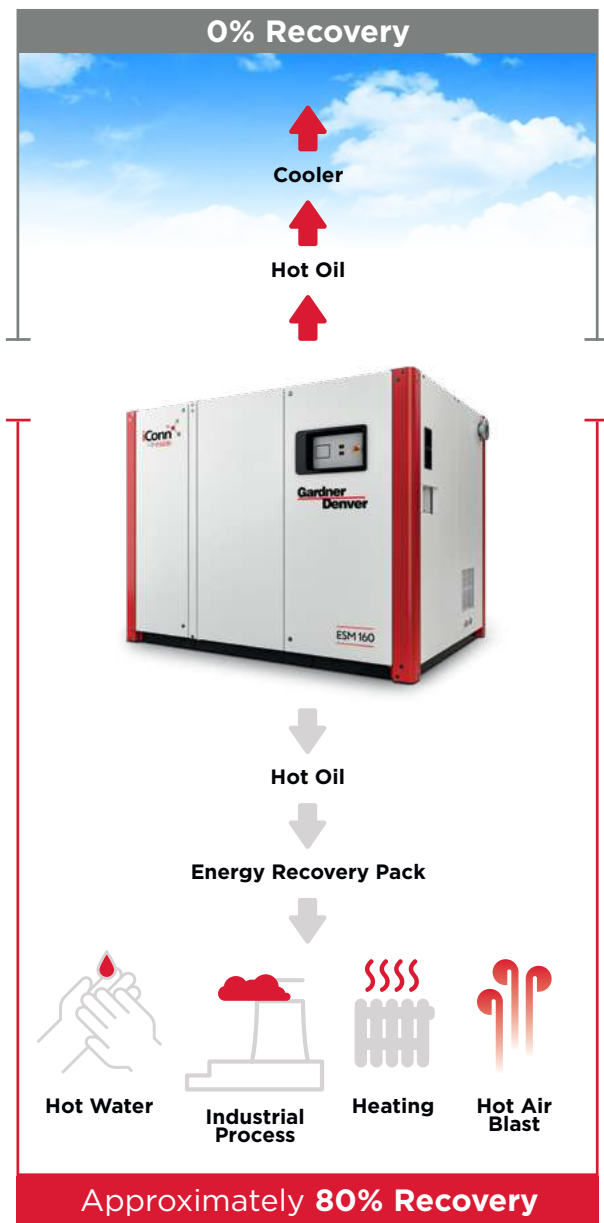
- Significant cost savings
- Lower CO<sub>2</sub> emissions
- Low investment costs

### Inverter driven radial fan

The ability to vary the speed of the fan via a frequency inverter optimises the efficiency. All regulated speed compressors are equipped with inverter driven radial fans on the oil cooler as standard. Fixed speed compressors can have it factory fitted as an option.

### Base load sequencing

Compressed air systems typically comprise of multiple compressors delivering air to a common distribution system. The addition of the optional base load sequencing module will allow to control centrally up to four compressors matching the delivery to the plant demand.





## Compressed **air purification**

Modern production systems and processes demand increasing levels of air quality. Air treatment products **manufactured by Gardner Denver**, utilise the latest technology and provide an energy-efficient solution at the lowest life cycle costs.

The new downstream portfolio manufactured by Gardner Denver utilising the latest technology, provides an energy efficient solution at lowest life cycle costs. The same quality, performance and efficiency standards delivered by the compressors can now be enjoyed from the air treatment range.

Investment in a manufacturing site in addition to the support teams, ensures that compressed air operators don't need to worry about the quality of their compressed air – quality that is key to ensuring maximum production efficiency and investment protection.

- Water Cyclone Separators
- Compressed Air Filters
- Condensate Drain System

- Compressed Air Refrigerant Dryer
- Heatless Desiccant Dryers
- Heat Regenerative Desiccant Dryers
- Nitrogen Generator
- GD Connect 12 Plus Multi Compressor Controllers





## The **best investment protection** you can get



Extended Warranty for GD Compressors

### 10 Years Warranty!

The Gardner Denver Protect 10 Warranty and Service programmes will protect you up to 44,000 hours/10 years<sup>1</sup>. It is one of the most generous warranties available in the industry affording you total piece of mind.

### Your benefits:

- The Protect 10 warranty is totally free to the compressor owner<sup>2</sup>
- The Gardner Denver authorised service provider will deliver a guaranteed quality of service
- The Protect 10 service agreement underpinning the warranty will enable accurate maintenance, budgeting and cost of ownership
- The use of genuine Gardner Denver parts and lubricants will maximise compressor life and efficiency

<sup>1</sup> Warranty duration is limited to 6 years/44,000 hours on the whole package, 10 years/44,000 hours on the air end. Whichever is the soonest.

<sup>2</sup> subject to Terms & Conditions

### Compact design - easy installation

The small footprint reduces the space required for installation.

### Easy servicing

The design of these packages ensures that the service points are readily accessible. The enclosure side doors are hinged and removable to allow complete access to all service points. The reduced number of moving parts further lowers the maintenance costs.

### Gardner Denver genuine spare parts

#### Enjoy complete peace of mind.

Genuine Gardner Denver parts and lubricants ensure that compressed air plant reliability and efficiency is maintained at the highest standards. Gardner Denver spare parts and lubricants are distinguished by:

- Long service life, even under harshest conditions
- Minimum losses contributing to energy savings
- High reliability improves plant up-time
- Products manufactured with the strictest Quality Assurance Systems





## Technical data

### ESM 160-290 Fixed Speed Screw Compressors

Gardner Denver model	Nominal Pressure	Drive Motor	FAD <sup>1)</sup>	Noise Level <sup>2)</sup>	Weight	Dimensions L x W x H
	bar g	kW	m <sup>3</sup> /min	dB(A)	kg	mm
ESM160	7.5	160	32.04	76	4186	2907 x 2071 x 2193
	10	160	28.20	76	4186	2907 x 2071 x 2193
	13	160	23.91	76	4186	2907 x 2071 x 2193
ESM200	7.5	200	39.23	77	4415	2907 x 2071 x 2193
	10	200	34.85	77	4415	2907 x 2071 x 2193
	13	200	29.38	77	4415	2907 x 2071 x 2193
ESM250	7.5	250	42.03	78	4625	2907 x 2071 x 2193
	10	250	37.01	78	4625	2907 x 2071 x 2193
	13	250	32.64	78	4625	2907 x 2071 x 2193
ESM290	7.5	250	47.10	79	4650	2907 x 2071 x 2193
	10	250	41.53	79	4650	2907 x 2071 x 2193
	13	250	36.44	79	4650	2907 x 2071 x 2193

### VS 160-290 Variable Speed Screw Compressors

Gardner Denver model	Nominal Pressure	Drive Motor	FAD <sup>1)</sup> Min - Max	Noise Level <sup>2)</sup> at 70% Load	Weight	Dimensions L x W x H
	bar g	kW	m <sup>3</sup> /min	dB(A)	kg	mm
VS160	5 - 13	160	6.54 - 32.33	75	4378	2907 x 2071 x 2193
VS200	5 - 13	200	5.99 - 39.44	77	4573	2907 x 2071 x 2193
VS250	5 - 13	250	5.83 - 42.80	78	4669	2907 x 2071 x 2193
VS290	5 - 13	250	5.87 - 47.02	79	4684	2907 x 2071 x 2193

All models are also available as WATER COOLED versions, for technical specifications please refer to the water cooled technical information sheets.

<sup>1)</sup> Data measured and stated in accordance with ISO 1217, Edition 4, Annex C and Annex E and the following conditions:  
Air Intake Pressure 1 bar a, Air Intake Temperature 20°C, Humidity 0 % (Dry).

<sup>2)</sup> Measured in free field conditions in accordance with ISO 2151, tolerance ± 3dB (A).

## Global Expertise

The GD rotary screw compressor range from 2.2 – 500 kW, available in both variable and fixed speed compression technologies, are designed to meet the highest requirements which the modern work environment and machine operators place on them.



The oil-free EnviroAire range from 15 – 355 kW provides high quality and energy efficient compressed air for use in a wide range of applications. The totally oil-free design eliminates the issue of contaminated air, reducing the risk and associated cost of product spoilage and rework.



A modern production system and process demands increasing levels of air quality. Our complete **Air Treatment Range** ensures the highest product quality and efficient operation.



Compressor systems are typically comprised of multiple compressors delivering air to a common header. The combined capacity of these machines is generally greater than the maximum site demand. To ensure the system is operated to the highest levels of efficiency, the **GD Connect** air management system is essential.



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For additional information please contact Gardner Denver or your local representative.

Specifications subject to change without notice.