

# ***ATLAS COPCO OIL-INJECTED ROTARY SCREW COMPRESSORS***

GA 90+ / GA 110-160 / GA 110-160 VSD  
(90-160 kW/125-200 hp)

**Atlas Copco**





## ***OUTSTANDING PERFORMANCE, MAXIMUM BENEFITS***

GA 90\*/GA 110-160 and GA 110-160 VSD compressors provide high-quality compressed air in the harshest environmental conditions. Incorporating the patented Atlas Copco's oil-injected screw element, they provide a long and trouble-free life at the lowest possible operating cost.



### **Metal industry**

Metal plants use compressed air for instrumentation, plant air and pneumatic conveying for raw materials or ash and are in need of an efficient solution to reduce their operating costs. Thanks to their innovative features, Atlas Copco's GA air compressors meet this demand.

### **Mining industry**

Compressed air is vital for the mining industry: applications include dust bag filtration, service air, ventilation air and pneumatic tools. The reliability and robustness of GA air compressors will accomplish the job even in the harshest conditions.

### **Power plants**

Power plants run round-the-clock to supply vital energy. A continuous supply of compressed air is absolutely critical for trouble-free operation. GA compressors provide a reliable source of compressed air for applications such as silt blowing and fly ash handling.

### **General industry**

Many industrial companies use compressed air in their daily operations. Applications include pneumatic tools for cutting, drilling, hammering and grinding; pneumatic actuators and valves; ventilation systems; packing and palleting machinery and conveyor systems. Atlas Copco's GA compressors are designed for ultimate performance and reliability.



## **Keeping your production up and running**

Atlas Copco's GA compressors ensure long and trouble-free lifetime at the lowest operating cost. At their heart are state-of-the-art compression elements based on innovative asymmetric rotor profiles and powered by a high efficiency electric motor. Combined with a built-to-last drive system and heavy duty air inlet filters, this results in maximum reliability to operate in the toughest conditions and at ambient temperatures up to 55°C/131°F.

## **Reducing your production costs**

The innovative design of GA compressors reduces your energy bill and overall compressor lifecycle costs. Variable Speed Drive (VSD) technology lowers costs by adjusting the air supply to your air demand. GA compressors are pre-assembled packages: installation is fault-free, commissioning time is low and no external instrumentation air is required.

## **Protecting your process**

The Full Feature concept includes compressed air and air treatment equipment integrated in the compressor canopy. This limits installation costs and space requirements. The integrated water separator immediately removes 100% of the condensate, resulting in higher air quality.

## **Maximizing your savings**

As there is no "one size fits all" concept, we have developed a comprehensive range of features, options and solutions to help you optimize the use of your compressor: from running the machine at high temperatures, to extra safety devices.



# SETTING A NEW STANDARD IN THE INDUSTRY

Atlas Copco's GA compressors bring you outstanding sustainability, reliability and performance, while minimizing the total cost of ownership. Built to perform even in the harshest environments, these compressors keep your production running efficiently.

1

## Efficient air-oil separation

- Enlarged vessel, better effect of air-oil separation.
- Reduction of pressure drops and energy costs.
- Low oil consumption ensures minimal maintenance costs and long compressor lifetime.
- Long lifetime of oil separator element.
- Easy replacing of oil separator element.

2

## State of the art screw element

- Patented asymmetric rotor profile and meticulous bearings selection.
- Low wear and tear leads to increase reliability.
- Optimum tip speed.
- Energy savings of 5-6% with the new element.

3

## Service friendly

- Selection of long lifetime consumable.
- Easy and safe access to all service parts.

4

## Optimized loading/unloading valve

- Assures constant optimized pressure in the system resulting in high energy savings.
- Smart design with few moving parts for highest reliability.
- Accurate control through solenoid valve.

5

## Triple benefits with the gear driven transmission

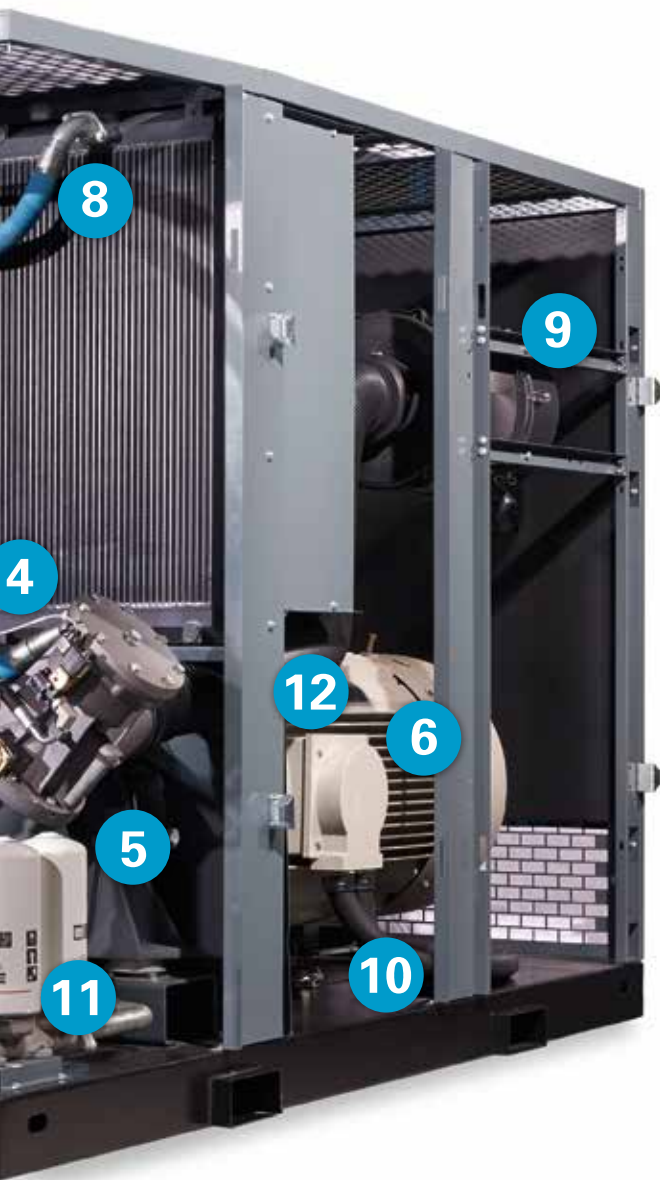
- Built to last, totally enclosed and protected against dirt and dust.
- High-efficiency drive arrangement; no coupling or slippage losses.
- Coupling to absorb the trust load and increase the reliability.

6

## High efficient motor

- TEFC IP55 motor (Class F insulation B rise) protects against dust and chemicals.
- Continuous operation under severe ambient.





7

### Durable design

- Solid metal pipe for durable operation and reduced service costs.
- Rigid straight connections eliminate risk of leaks and improve package efficiency.

8

### Cooling module

- Separated oil and after coolers for highest efficiency.
- Standard design up to 46°C/115°F and HAT (55°C/131°F) variant available.
- Cooling fans located in the middle for fresh air in the system and no heat build up.
- Fans with low noise level.

9

### Heavy duty air intake filter

- Protects the compressor components by removing 99.9% of dirt particles down to 3 microns.
- Reduces the dust load in the fine filter, doubling the filter element lifetime.

10

### Easy to install

- All-in-one inclusive package with flexible ducting possibilities.
- All user connections located at the same side of the compressor.
- Phase sequence relay as standard to protect the compressor against reverse.

11

### Heavy-duty oil filter

- Outstanding oil purification capability ensures a clean compressor oil system.
- High reliability of screws, bearings and gears in harsh environments.
- Long service period and easy and quick filter change reduce maintenance costs.

12

### Water separator drain

- Float valve drain system – no loss.
- After-cooler with mounted air-water separator is able to separate almost 100% condensates in time and provide compressed air of better quality.
- Large sized water outlet ensures good draining in hot and humid environments and prevents risk of clogging.
- Hence reliable operation with a minimum of maintenance cost .

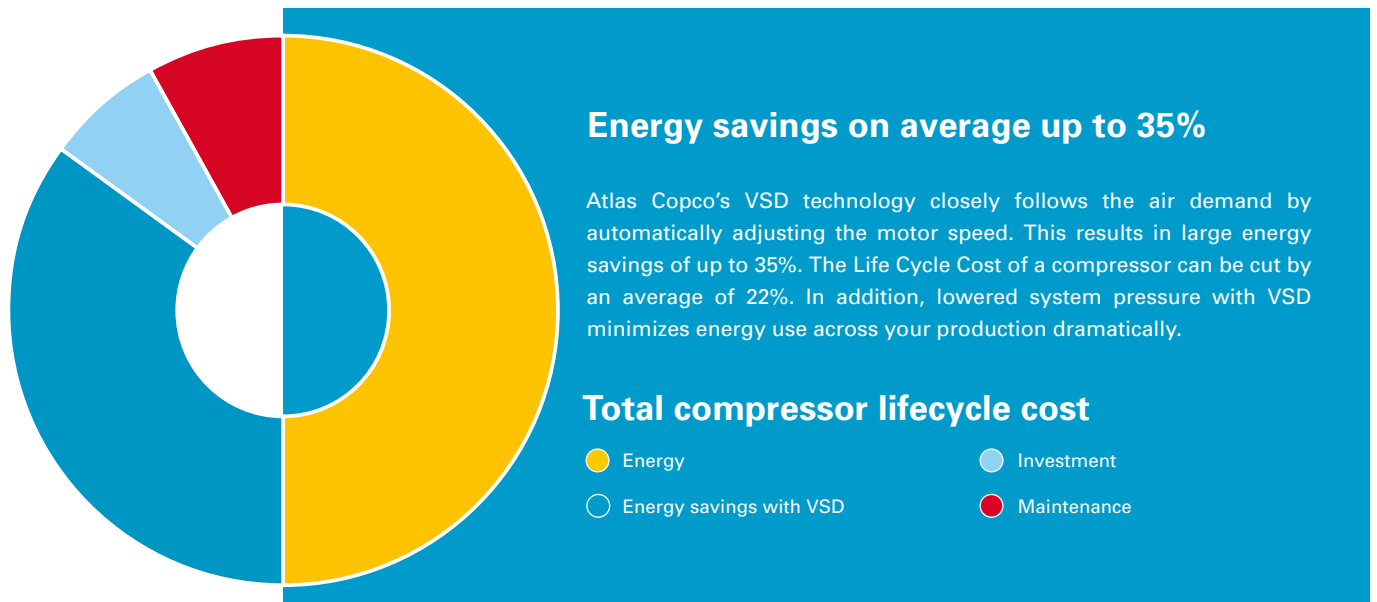
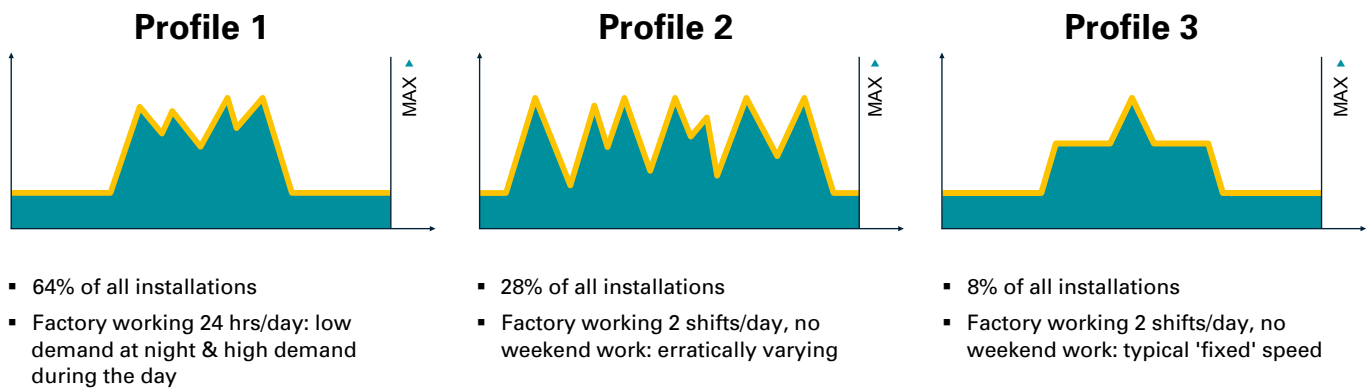


# VSD: DRIVING DOWN YOUR ENERGY COSTS

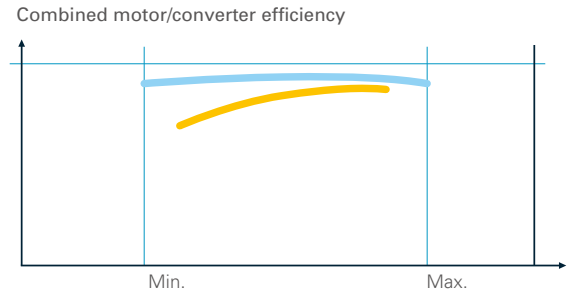
Over 70% of a compressor's lifecycle cost is taken up by the energy it consumes. Moreover, the generation of compressed air can account for more than 40% of a plant's total electricity bill. To cut your energy costs, Atlas Copco pioneered Variable Speed Drive (VSD) technology already for several decades. VSD leads to major energy savings, while protecting the environment for future generations. Thanks to continual investments in this technology, Atlas Copco offers the widest range of integrated VSD compressors on the market.

## What is VSD technology?

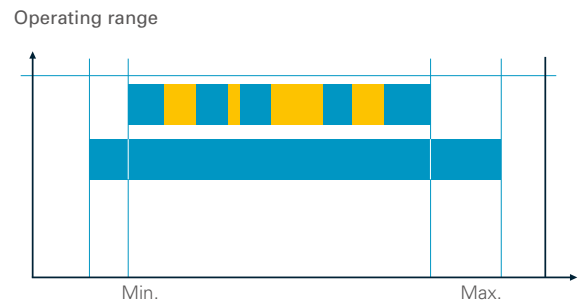
In almost every production environment, air demand fluctuates depending on different factors (time of the day, week or even month). Extensive measurements and studies of compressed air demand profiles show that many compressors have substantial variations in air demand. Only 8% of all installations have a more stable air demand. Tests prove that, even in this case, VSD compressors save energy.



# WHAT IS UNIQUE ABOUT THE INTEGRATED ATLAS COPCO GA VSD?



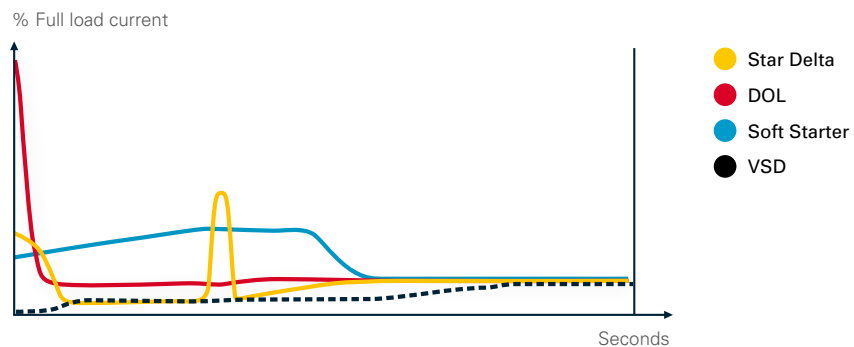
● Integrated VSD      ● Non-integrated VSD



● Speed windows      ● Atlas Copco integrated solution

- 1 The Elektronikon® controls both the compressor and the integrated converter, ensuring maximum machine safety within parameters.
- 2 Flexible pressure selection from 4 to 13 bar with electronic gearing reduces electricity costs.
- 3 Specific converter and motor design (with protected bearings) for the highest efficiency across the speed range.
- 4 Electric motor specifically designed for low operating speeds with clear attention to motor cooling and compressor cooling requirements.
- 5 All Atlas Copco GA VSD compressors are EMC tested and certified. Compressor operation does not influence external sources and vice versa.
- 6 Mechanical enhancements ensure that all components operate below critical vibration levels throughout the entire compressor speed range.
- 7 A highly efficient frequency converter in a cool overpressure cubicle ensures stable operation in high ambient temperatures up to 50°C/122°F (standard up to 46°C/114.8°F).
- 8 No 'speed windows' that can jeopardize the energy savings and the stable net pressure. Turndown capability of the compressor is maximized to 80-85%.
- 9 The cubicle cooling booster increases the lifetime of electrical components due to a cool cubicle in overpressure and reduced dust ingress.
- 10 Net pressure band is maintained within 0.10 bar, 1.5 psi.

## No current peaks



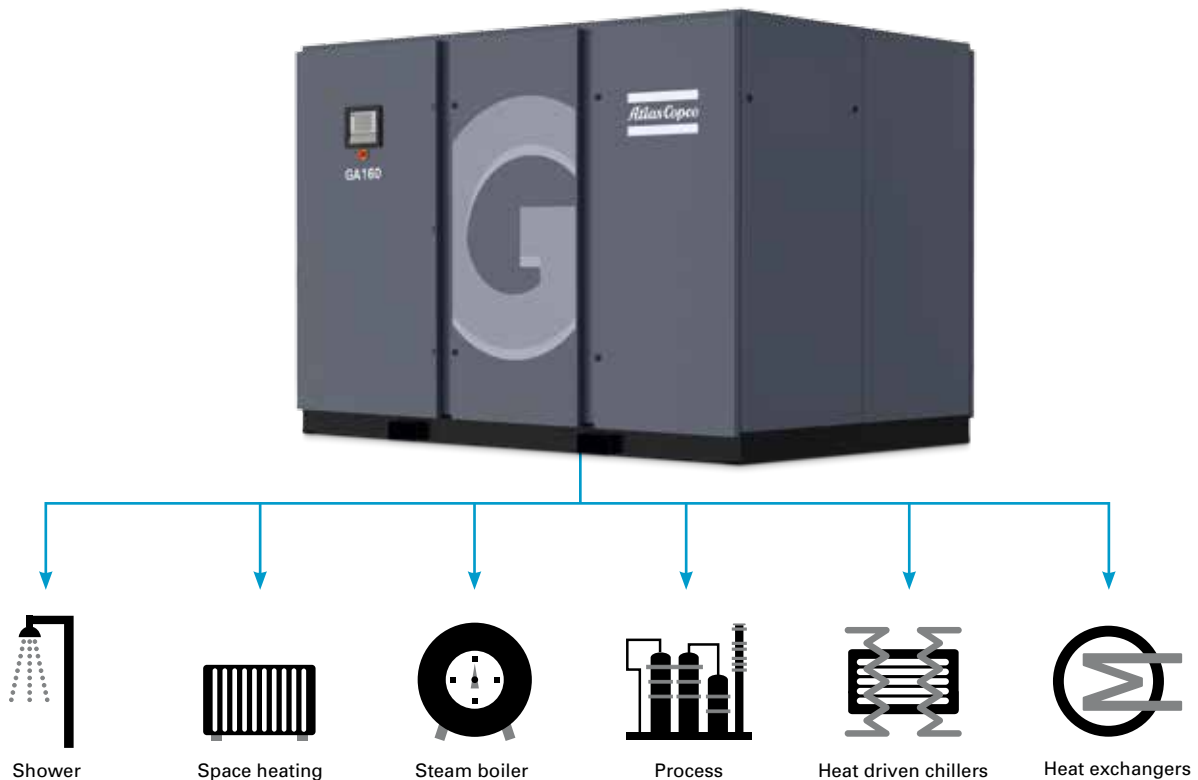
# INCREASE YOUR SAVINGS WITH ENERGY RECOVERY

The Kyoto directives and the continuing depletion of traditional energy sources mean that businesses throughout the world are making commitments to significantly reduce overall energy consumption. Through innovative products and solutions, Atlas Copco helps you achieve your goals in this area. When it comes to compressed air production – where energy costs can constitute 70% of total lifecycle costs – saving energy can also lead to substantial cost savings.

## Integrated heat exchanger

Air compression creates heat that is normally wasted in the coolers. Energy recovery systems designed by Atlas Copco enable the recovery of most of this heat. Recovery of energy from the shaft input of the compressor can be up to 94% of the compressor shaft power. The heat is directly usable as a source of energy in the form of hot water (85-90°C/185- 194°F). The main module of the recovery system is built into the compressor.

The investment needed to link the hot oil circuit from the compressor to the existing water circuit is relatively modest and the time needed before seeing payback from your investment is generally very short.



## Warm air heat recovery

The ducting on your GA compressors also constitutes a simple and smart solution to generate space heating. Ducting simply directs the warmed cooling air to where it is needed – such as workshops, storage warehouses or other facilities. To cope with seasonal changes, louver flaps can be used to vent the warm air to the outside. An installation with motorized and thermostatically controlled louvers is the ideal solution to accurately monitor the temperature with a full control of the flow of heating air.

Applications:

- Heating of facilities, warehouses or workshops.
- Drying air for painting and washing applications.



# PROTECT YOUR PRODUCTION WITH THE GA FF

Untreated compressed air contains moisture, aerosols and dirt particles that can damage your air system and contaminate your end product, resulting in risk of corrosion and compressed air system leaks. Maintenance costs can far exceed air treatment costs. Our compressors provide the clean, dry air that improves your system’s reliability, avoids costly downtime and production delays, and safeguards the quality of your products.

## All-in-one quality air production

The GA FF (Full Feature) is a ready-to-use, compact package that guarantees a pressure dewpoint of 3°C/37°F (100% relative humidity at 20°C/68°F). All the wires and pipes are assembled in the factory, so there is no need for additional installation work. The dryers can perform at ambient conditions up to 46°C/115°F.



## Save money and the environment

The unique and patented Saver Cycle Control stops the dryer when the compressor is stopped or in unload mode, drastically reducing power consumption. The dewpoint is continuously monitored and the dryer is re-started when the dewpoint begins to increase.

## Optimized air purity

The optional external DD/PD filters and integrated refrigerant air dryer efficiently remove moisture, aerosols and dirt particles to protect your investment. This air quality prolongs the life of downstream equipment, increasing efficiency and ensuring quality of your final product.

Configure your GA for the air quality you need	ISO Quality Class	Dirt Particle Size	Water Pressure Dew Point	Oil Concentration
GA	3.-4	3 microns	-	3 ppm
GA FF with ID	3.4.4	3 microns	+3°C, 37°F	3 ppm

# A STEP AHEAD IN MONITORING AND CONTROLS

The Elektronikon® operating system offers a wide variety of control and monitoring features that allow you to increase your compressor's efficiency and reliability. To maximize energy efficiency, the Elektronikon® controls the main drive motor and regulates system pressure within a predefined and narrow pressure band.



## Built-in intelligence

- Improved user-friendliness: 5.7" color display with clear pictograms for easy readout.
- Monitoring of running conditions and graphical indication of the service plan.
- Regulates system pressure within a predefined narrow pressure band.
- Integrated energy savings functions like dual pressure set point, 4 different programmable week schedules.
- Comprehensive icon indications and intuitive navigation.
- 31 different languages including character-based languages.
- Durable keyboard to resist tough treatment in demanding environments.
- Internet-based compressor visualization using a simple Ethernet connection.
- Remote control and advanced connectivity functions.



## Online & mobile monitoring

Monitor your compressors over the Ethernet with the new Elektronikon® controller. Monitoring features include warning indications, compressor shut-down and maintenance scheduling. An Atlas Copco App is available for iPhone/Android phones as well as iPad and Android tablets. It allows fingertip monitoring of your compressed air system through your own secured network.



## ES – Fully optimized system

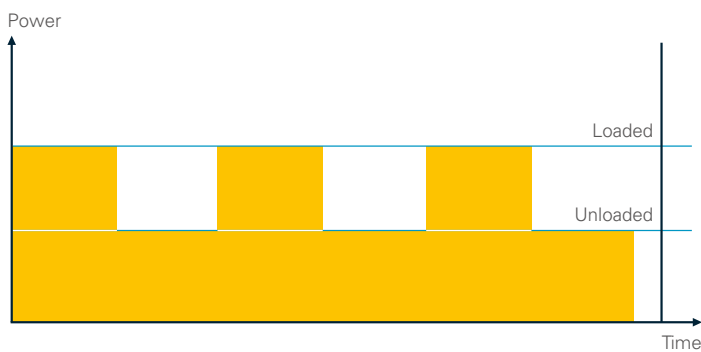
A properly managed compressed air network will save energy, reduce maintenance, decrease downtime, increase production and improve product quality. Atlas Copco's ES central controllers are the most efficient way to monitor and control multiple compressors simultaneously as well as dryers and filters. An ES controller offers one central point of control for your whole compressed air network, ensuring all compressors provide optimum performance for your process. The result is a completely dependable and energy efficient network, giving you peace of mind and keeping your costs to a minimum.

## Dual pressure set-point and Delayed Second Stop

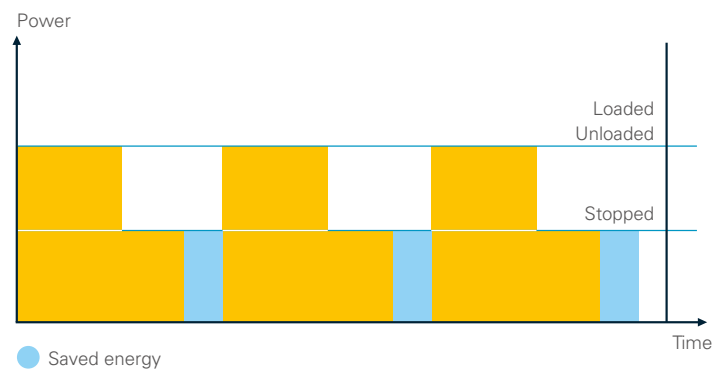
Most production processes create fluctuating levels of demand which, in turn, can create energy waste in low use periods. Using either the standard or graphic Elektronikon® controller, you can manually or automatically create two different system pressure bands to optimize energy use and reduce costs at low use times.

In addition, the sophisticated Delayed Second Stop (DSS) runs the drive motor only when needed. As the desired system pressure is maintained while the drive motor's run time is minimized, energy consumption is kept to a minimum.

### Without DSS



### With DSS



## SMARTLink\*: Data monitoring program

- A remote monitoring system that helps you optimize your compressed air system and save you energy and cost.
- It offers you a complete insight in your compressed air network and anticipates on potential problems by warning you up-front.

\* Please contact your local sales representative for more information.

# OPTIMIZE YOUR SYSTEM

Air circuit	Efficient air inlet filters and flexibles
	Air intake valve (not on VSD units)
	Full load/no load regulation system (not for VSD)
Oil circuit	Heavy-duty oil filters
	Complete oil circuit
	Air/oil separation system
Cooling circuit	Compressed air aftercooler and oil cooler
	Stainless steel tube and Shell coolers for water-cooled versions
	Axial cooling fans for air-cooled versions.
	Integrated water separator
	Complete air, oil, water circuit
	Roto Xtend duty synthetic lubricant
Cooling circuit	TEFC IP55 Class F electric motor
	Starters (Star-Delta)
	Pre-mounted electrical VSD cubicles (only for VSD units)
	Elektronikon® control system
	PTC protection (only for VSD units)
	Phase sequence relay
Framework	Flexible vibration dampers
	Silenced canopy
	Structural skid with no need for foundations

## ADDITIONAL FEATURES & OPTIONS

	GA 90*-160	GA 110-160 VSD
Full Feature: integrated ID refrigerant dryer	•	•
High ambient version (up to 55°C/131°F)*	•	•
Integrated Energy Recovery system	•	•
Modulation control	•	-
PT1000 thermal protection and Anti-condensation heaters	•	-
SPM vibration monitoring system	•	•
Anchor pads	•	•
Witnessed performance test	•	•
Material certificates	•	•
Seaworthy packaging	•	•

\* GA VSD up to 50°C/122°F; GA fix speed Pack up to 55°C/131°F. Not available on Full Feature.

• : Optional - : Not available

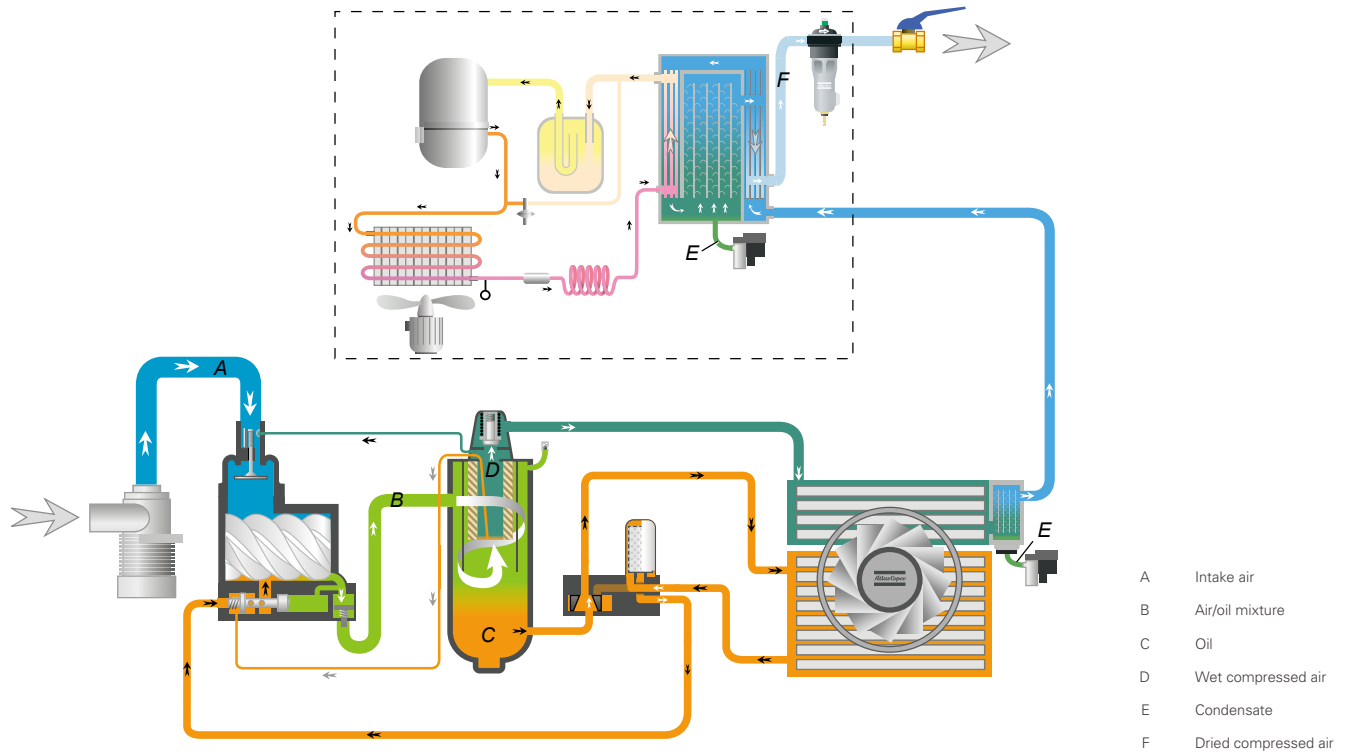
## DIMENSIONS

TYPE	Pack						Full Feature					
	L	W	H	L	W	H	L	W	H	L	W	H
	mm			inch			mm			inch		
GA 90*/GA 110-160 air-cooled & water-cooled	2974	2000	2000	117	79	79	3874	2000	2000	153	79	79
GA 110-160 VSD air-cooled & water-cooled	2974	2000	2000	117	79	79	3874	2000	2000	153	79	79

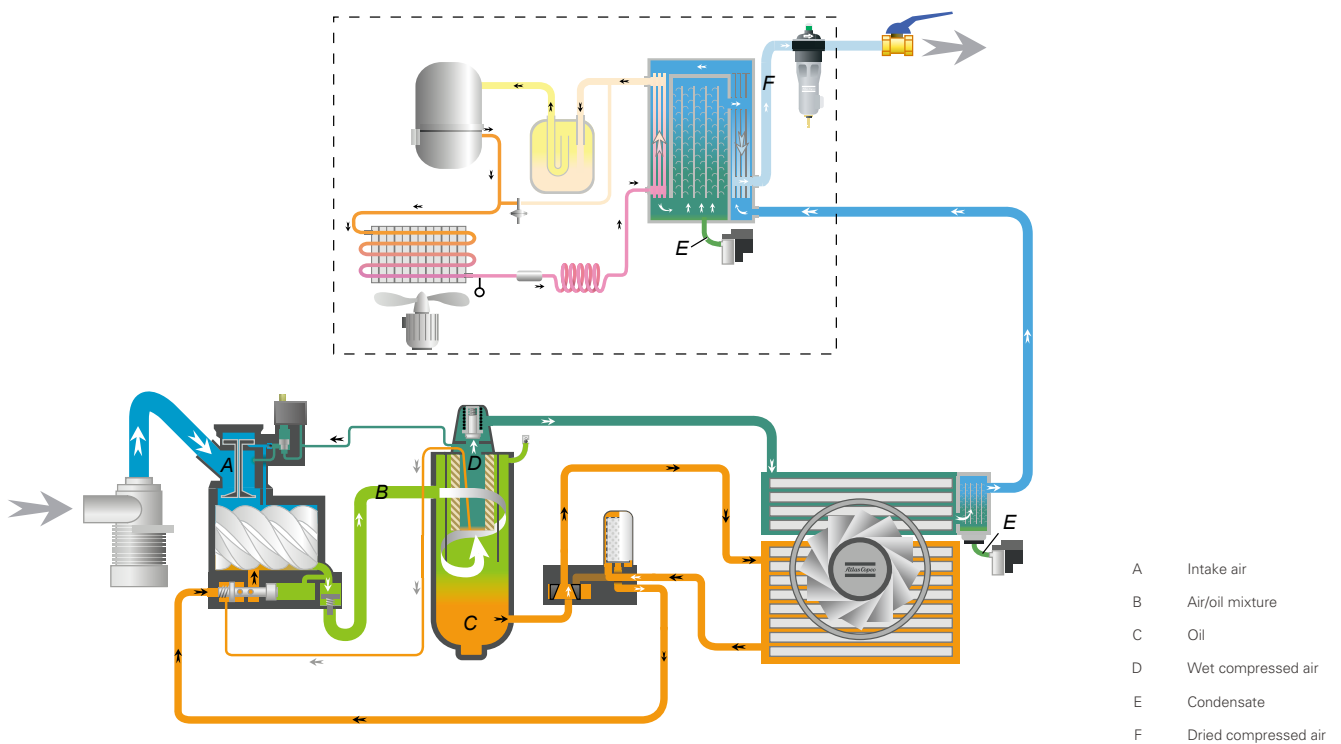


# FLOW CHARTS

## Variable speed drive: GA VSD



## Fixed speed: GA+ & GA



# TECHNICAL SPECIFICATIONS 50 HZ

TYPE	Maximum working pressure				Capacity FAD (1)			Installed motor power		Noise level (2)	Weight			
	Standard		Full Feature (3)								Standard		Full Feature	
	bar(e)	psig	bar(e)	psig	l/s	m <sup>3</sup> /min	cfm	kW	hp	dB(A)	kg	lbs	kg	lbs
GA90+	5.5	80	5.3	77	330	19.8	699	90	125	74	2890	6372	3255	7176
	7.5	109	7.3	106	292	17.5	619	90	125	74	2890	6372	3255	7176
	8.5	123	8.3	120	274	16.4	581	90	125	74	2890	6372	3255	7176
	10	145	9.8	142	244	14.6	517	90	125	74	2890	6372	3255	7176
GA110	5.5	80	5.3	77	401	24.0	850	110	150	74	2890	6372	3255	7176
	7.5	109	7.3	106	356	21.4	754	110	150	74	2890	6372	3255	7176
	8.5	123	8.3	120	337	20.2	714	110	150	74	2890	6372	3255	7176
	10	145	9.8	142	306	18.3	648	110	150	74	2890	6372	3255	7176
	14	203	13.8	200	245	14.7	519	110	150	74	2890	6372	3255	7176
GA132	5.5	80	5.3	77	471	28.2	998	132	175	74	3380	7452	3745	8257
	7.5	109	7.3	106	424	25.4	898	132	175	74	3380	7452	3745	8257
	8.5	123	8.3	120	401	24.0	850	132	175	74	3380	7452	3745	8257
	10	145	9.8	142	368	22.0	780	132	175	74	3380	7452	3745	8257
	14	203	13.8	200	295	17.7	625	132	175	74	3380	7452	3745	8257
GA160	7.5	109	7.3	106	506	30.4	1072	160	215	74	3490	7695	3855	8499
	8.5	123	8.3	120	482	28.9	1021	160	215	74	3490	7695	3855	8499
	10	145	9.8	142	446	26.8	945	160	215	74	3490	7695	3855	8499
	14	203	13.8	200	369	22.1	782	160	215	74	3490	7695	3855	8499

TYPE	Maximum working pressure				Capacity FAD (1)			Installed motor power		Noise level (2)	Weight			
	Standard		Full Feature (3)								Standard		Full Feature	
	bar(e)	psig	bar(e)	psig	l/s	m <sup>3</sup> /min	cfm	kW	hp	dB(A)	kg	lbs	kg	lbs
GA132VSD (14)	9	131	9	131	172 - 377	10.3 - 22.6	367 - 799	132	175	74	3480	7673	3975	8764
	10	145	10	145	171 - 357	10.3 - 21.4	362 - 756	132	175	74	3480	7673	3975	8764
	13.5	196	13	189	163 - 285	9.8 - 17.1	345 - 604	132	175	74	3480	7673	3975	8764
GA160VSD (14)	9	131	9	131	169 - 451	10.1 - 27.1	358 - 956	160	215	74	3480	7673	3975	8764
	10	145	10	145	167 - 429	10.0 - 25.7	354 - 909	160	215	74	3480	7673	3975	8764
	13.5	196	13	189	159 - 354	9.5 - 21.2	337 - 750	160	215	74	3480	7673	3975	8764

(1) Unit performance measured according to ISO 1217, Annex C and E, Edition 4 (2009).

Reference conditions:

Absolute inlet pressure: 1 bar (14.5 psi).

Intake air temperature: 20°C, 68°F.

(2) A-weighted emission sound pressure level at the work station, L<sub>p</sub> WSA (re 20 µPa) dB (with uncertainty 3 dB).

Values determined according to noise level test code ISO 2151 and noise measurement standard ISO 9614.

Pressure dew point of integrated refrigerant dryer at reference conditions: 2°C to 3°C, 36°F to 37°F.

(3) Integrated dryer: Compressed air pressure dewpoint at dryer reference conditions 3°C.

FAD is measured at the following working pressures:

5.5 bar versions at 5 bar

7.5 bar versions at 7 bar

8.5 bar versions at 8 bar

10 bar versions at 9.5 bar

14 bar versions at 13.5 bar

# TECHNICAL SPECIFICATIONS 60 HZ

TYPE	Maximum working pressure				Capacity FAD (1)			Installed motor power		Noise level (2)	Weight			
	Standard		Full Feature (3)								Standard		Full Feature	
	bar(e)	psig	bar(e)	psig	l/s	m <sup>3</sup> /min	cfm	kW	hp	dB(A)	kg	lbs	kg	lbs
GA90+	5.5	80	5.3	77	343	20.5	727	90	125	74	3300	7275	3665	8080
	7.4	107	7.2	104	302	18.1	640	90	125	74	3300	7275	3665	8080
	9.1	132	8.9	129	274	16.4	581	90	125	74	3300	7275	3665	8080
	10.9	158	10.7	155	239	14.3	506	90	125	74	3300	7275	3665	8080
GA110	5.5	80	5.3	77	406	24.3	860	110	150	74	3300	7275	3665	8080
	7.4	107	7.2	104	363	21.7	769	110	150	74	3300	7275	3665	8080
	9.1	132	8.9	129	331	19.8	701	110	150	74	3300	7275	3665	8080
	10.9	158	10.7	155	295	17.7	625	110	150	74	3300	7275	3665	8080
	14	203	13.5	196	248	14.9	525	110	150	74	3300	7275	3665	8080
GA132	5.5	80	5.3	77	467	28.0	990	132	175	74	3440	7584	3805	8389
	7.4	107	7.2	104	421	25.2	892	132	175	74	3440	7584	3805	8389
	9.1	132	8.9	129	385	23.1	816	132	175	74	3440	7584	3805	8389
	10.9	158	10.7	155	346	20.7	733	132	175	74	3440	7584	3805	8389
	14	203	13.5	196	290	17.4	614	132	175	74	3440	7584	3805	8389
GA160	7.4	107	7.2	104	477	28.6	1006	160	215	74	3600	7937	3965	8741
	9.1	132	8.9	129	439	26.4	926	160	215	74	3600	7937	3965	8741
	10.9	158	10.7	155	399	23.9	841	160	215	74	3600	7937	3965	8741
	14	203	13.5	196	339	20.3	714	160	215	74	3600	7937	3965	8741

TYPE	Maximum working pressure				Capacity FAD (1)			Installed motor power		Noise level (2)	Weight			
	Standard		Full Feature (3)								Standard		Full Feature	
	bar(e)	psig	bar(e)	psig	l/s	m <sup>3</sup> /min	cfm	kW	hp	dB(A)	kg	lbs	kg	lbs
GA132VSD (200)	9	131	9	131	172 - 377	10.3 - 22.6	367 - 799	132	175	74	3480	7673	3975	8764
	10.4	151	10.4	151	170 - 348	10.2 - 20.9	360 - 737	132	175	74	3480	7673	3975	8764
	13.5	196	12.8	186	163 - 285	9.8 - 17.1	345 - 604	132	175	74	3480	7673	3975	8764
GA160VSD (200)	9	131	9	131	169 - 451	10.1 - 27.1	358 - 956	160	215	74	3480	7673	3975	8764
	10.4	151	10.4	151	166 - 420	10.0 - 25.2	352 - 890	160	215	74	3480	7673	3975	8764
	13.5	196	12.8	186	159 - 354	9.5 - 21.2	337 - 750	160	215	74	3480	7673	3975	8764

(1) Unit performance measured according to ISO 1217, Annex C and E, Edition 4 (2009).

Reference conditions:

Absolute inlet pressure: 1 bar (14.5 psi).

Intake air temperature: 20°C, 68°F.

(2) A-weighted emission sound pressure level at the work station, L<sub>p</sub> WSA (re 20 µPa) dB (with uncertainty 3 dB).

Values determined according to noise level test code ISO 2151 and noise measurement standard ISO 9614.

Pressure dew point of integrated refrigerant dryer at reference conditions: 2°C to 3°C, 36°F to 37°F.

(3) Integrated dryer: Compressed air pressure dewpoint at dryer reference conditions 3°C.

FAD is measured at the following working pressures:

75 psi variants at 73 psi

100 psi variants at 100 psi

125 psi variants at 125 psi

150 psi variants at 150 psi

200 psi variants at 200 psi

## ***COMMITTED TO SUSTAINABLE PRODUCTIVITY***

We stand by our responsibilities towards our customers,  
towards the environment and the people around us.  
We make performance stand the test of time.  
This is what we call — Sustainable Productivity.

[www.atlascopco.com](http://www.atlascopco.com)

***Atlas Copco***