

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



*Atlas Copco*

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





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

GA 90\*-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, our 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. GA compressors are designed for ultimate performance and reliability.



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

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. 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 range of features and options 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

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

## Superior air quality

- Standard integrated water separator to remove 100% of the condensate with electronic drain.
- 3-step efficient oil separation process for low residual oil content in the compressed air (less than 3 ppm).

2

## State-of-the-art screw element

- Patented asymmetric rotor profile for maximum efficiency.
- Bearing selection leads to low wear for increased reliability.

3

## Service friendly

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

4

## Triple benefits with the gear driven transmission

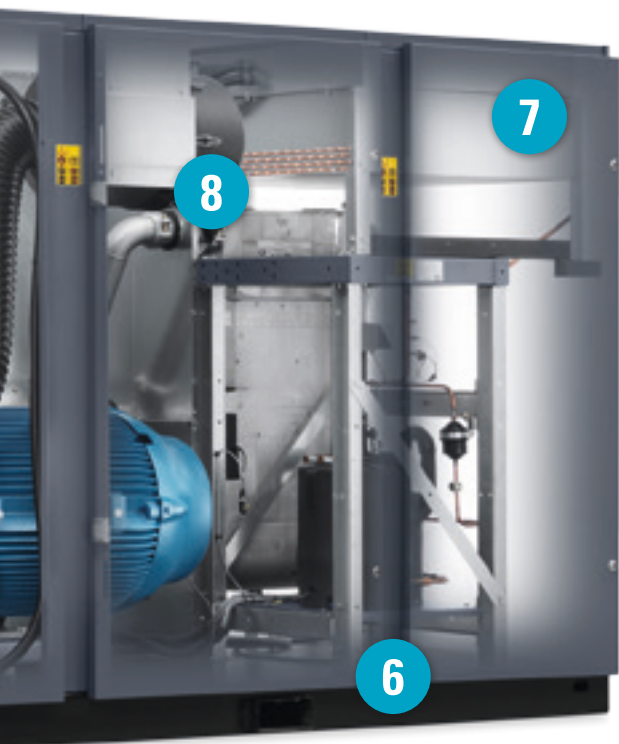
- Built to last, totally enclosed and protected against dirt and dust.
- High-efficiency drive arrangement; no coupling or slippage losses.
- Coupling to absorb the thrust load and increase the reliability.

5

## High efficient motor

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





6

## Easy to install

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

7

## Integrated refrigerant dryer

- Highly efficient dryer to increase the savings.
- Reduced floor space requirements.
- Optimized operation with the Elektronikon® unit controller.

8

## 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 without reducing filter efficiency.

9

## 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 to prevent build-up of heat.
- Fans with low noise level.

10

## Durable design

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

11

## Optimized loading/unloading valve

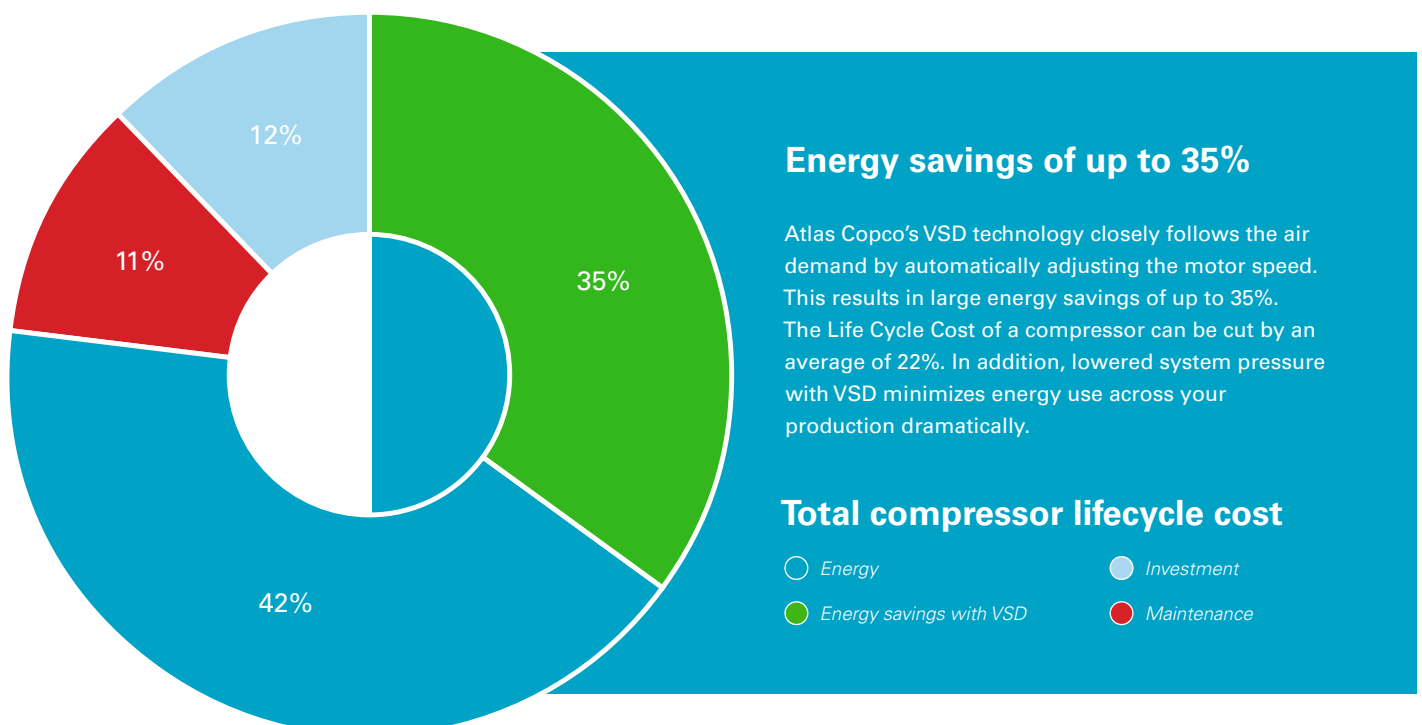
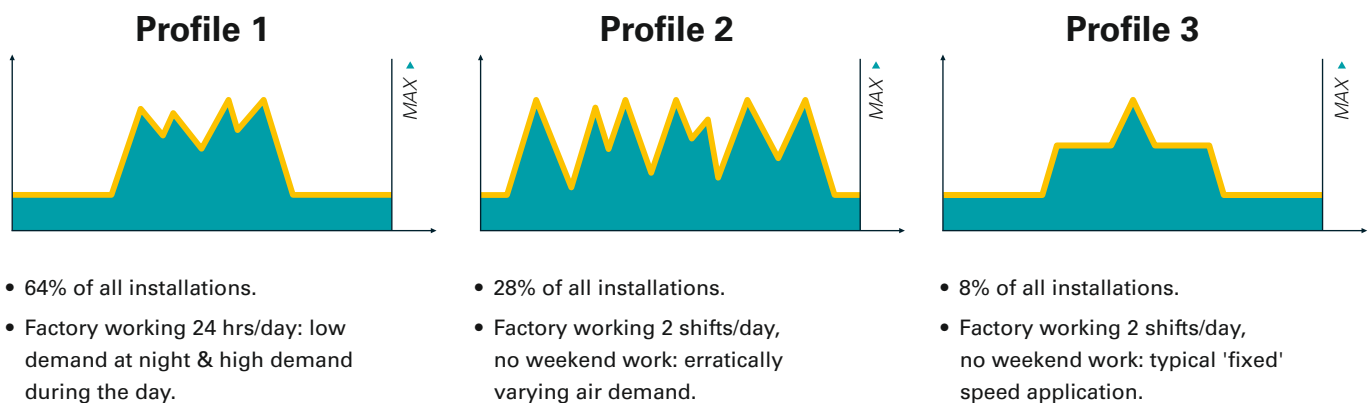
- Assures constant optimized pressure in the system resulting in high energy savings.
- Smart design with few moving parts for highest reliability.
- Accurate control through solenoid valve.

# VSD: DRIVING DOWN YOUR ENERGY COSTS

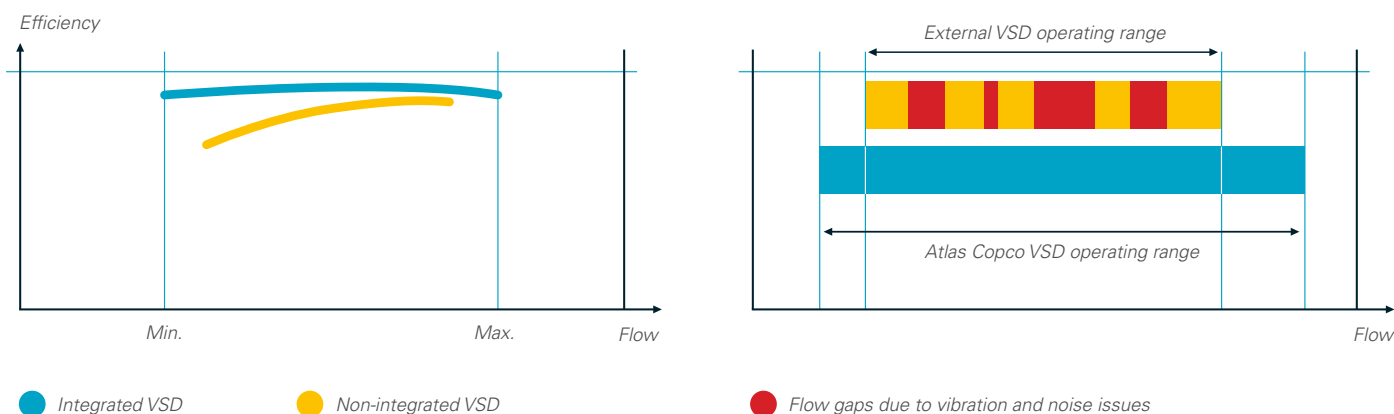
Over 70% of a compressor's lifecycle cost is taken up by the energy it consumes. Moreover, the generation of compressed air can account for more than 40% of a plant's total electricity bill. To cut your energy costs, Atlas Copco has pioneered Variable Speed Drive (VSD) technology for several decades. VSD leads to major energy savings, reducing the consumption of energy producing fuels and protecting the environment for future generations. Thanks to continual investments in this technology, we offer 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.

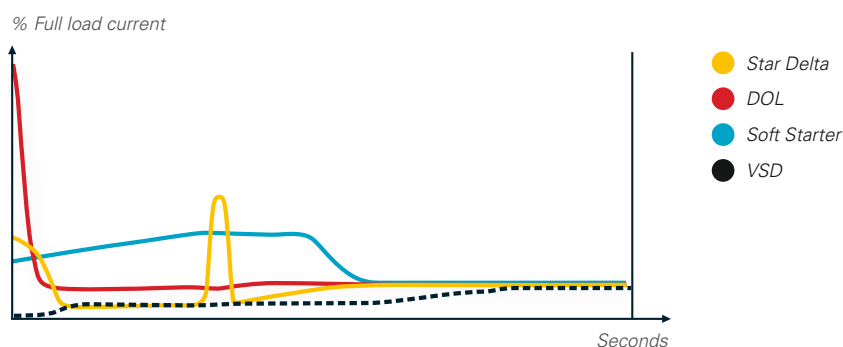


# WHAT IS UNIQUE ABOUT THE INTEGRATED ATLAS COPCO GA VSD?



- 1 The Elektronikon® unit controller manages 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 It is important to ensure that when using a Variable Speed Drive vibration and noise issues do not occur. Atlas Copco compressors are designed and tested to guarantee they **operate across the entire frequency range of operation**. When an external VSD drive is used it may become necessary to limit the operating range of the compressor, leading to reduced energy saving and jeopardizing stable air network pressure.
- 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 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, reducing maintenance requirements 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             |
| GA FF with ID & general purpose coalescing filter | 2.4.2             | 1 micron           | +3°C, 37°F               | 0.1 ppm           |

# MONITORING AND CONTROL: HOW TO GET THE MOST FROM THE LEAST

The Elektronikon® unit controller is specially designed to maximize the performance of your compressors and air treatment equipment under a variety of conditions. Our solutions provide you with key benefits such as increased energy efficiency, lower energy consumption, reduced maintenance times and less stress... less stress for both you and your entire air system.



## Intelligence is part of the package

- High resolution color display gives you an easy to understand readout of the equipment's running conditions.
- Clear icons and intuitive navigation provides you fast access to all of the important settings and data.
- Monitoring of the equipment running conditions and maintenance status; bringing this information to your attention when needed.
- Operation of the equipment to deliver specifically and reliably to your compressed air needs.
- Built in remote control and notifications functions provided as standard, including simple to use Ethernet based communication.
- Support for 31 different languages, including character based languages.



## Online & mobile monitoring

Monitor your compressors over the Ethernet with the Elektronikon® unit 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.



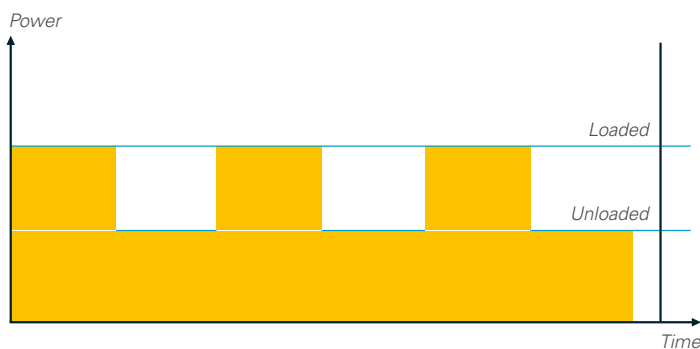
## Full optimization - ES system controller

Improve product quality every minute that your facility is in operation. Atlas Copco's ES system controllers offer a convenient way to achieve optimized performance from your low pressure equipment through a single centralized point of monitoring and control. With the ES system controller watching over your compressors and compressed air network, you will have a highly dependable and energy efficient solution working with your facility to manage operating costs.

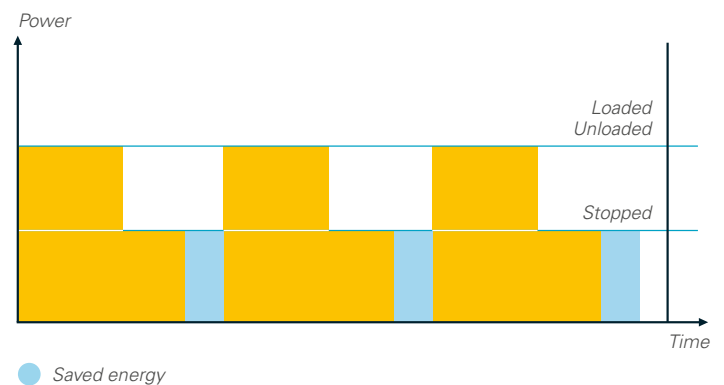
## Dual pressure set-point and Delayed Second Stop

Most production processes create fluctuating levels of demand which, in turn, can create energy waste in low use periods. Using the graphic Elektronikon® unit 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                                                 |
|                       | Full load/no load regulation system                              |
| 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                                       |
|                       | Electronic water drains with no loss of compressed air           |
|                       | Complete air, oil, water circuit                                 |
| Electrical components | Roto Xtend duty synthetic lubricant                              |
|                       | TEFC IP55 Class F electric motor                                 |
|                       | Starters (Star-Delta)                                            |
|                       | Elektronikon® unit controller                                    |
| Framework             | Phase sequence relay                                             |
|                       | Flexible vibration dampers                                       |
|                       | Silenced canopy                                                  |
|                       | Structural skid with no need for foundations                     |
|                       | Suppression of emissions/harmonic distortions                    |

# ADDITIONAL FEATURES & OPTIONS

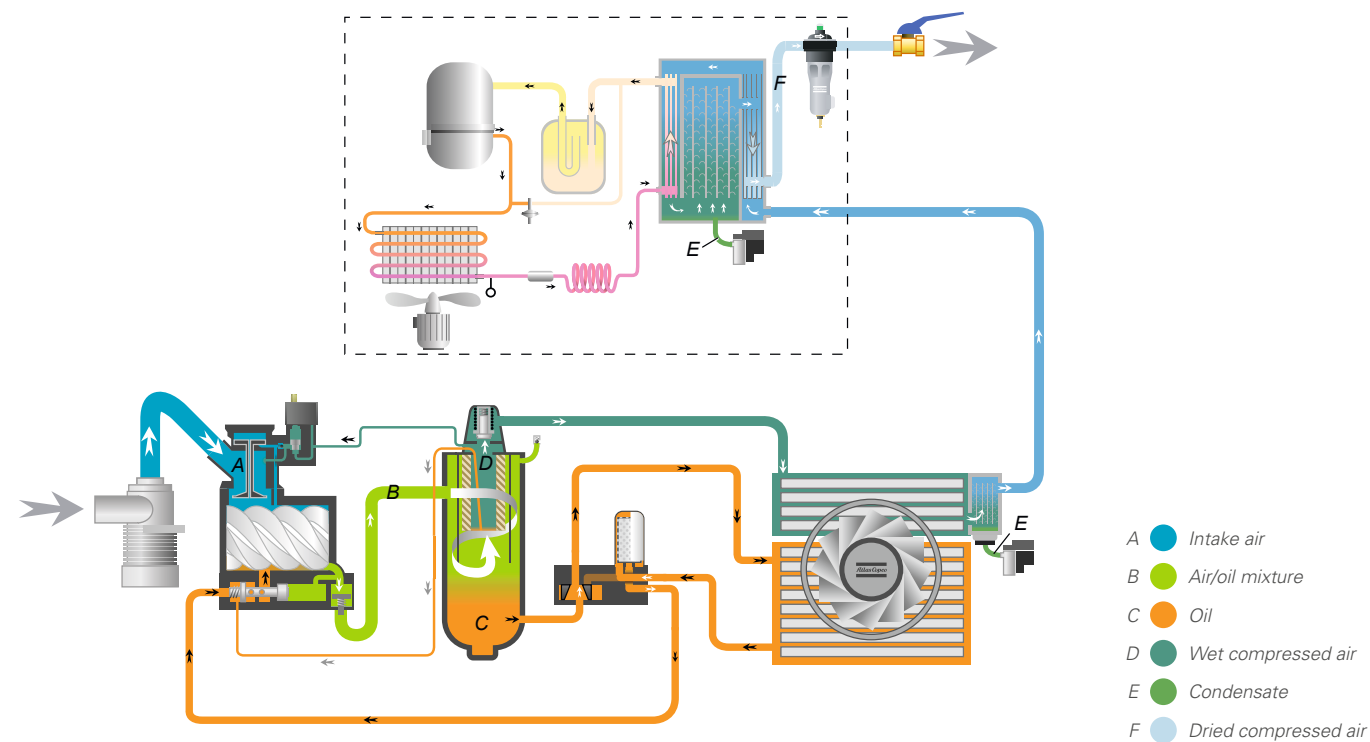
|                                                                             | GA 90*-160 | GA 110-160 VSD |
|-----------------------------------------------------------------------------|------------|----------------|
| Full Feature: integrated ID refrigerant dryer                               | •          | •              |
| High ambient version (up to 55°C/131°F)*                                    | •          | •              |
| Integrated Energy Recovery system                                           | •          | •              |
| Modulation control                                                          | •          | -              |
| Full option motor (PT1000 thermal protection and Anti-condensation heaters) | •          | -              |
| SPM vibration monitoring system                                             | •          | •              |
| Anchor pads                                                                 | •          | •              |
| NPT or ANSI connections                                                     | •          | •              |
| Performance test certificate                                                | •          | •              |
| 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.

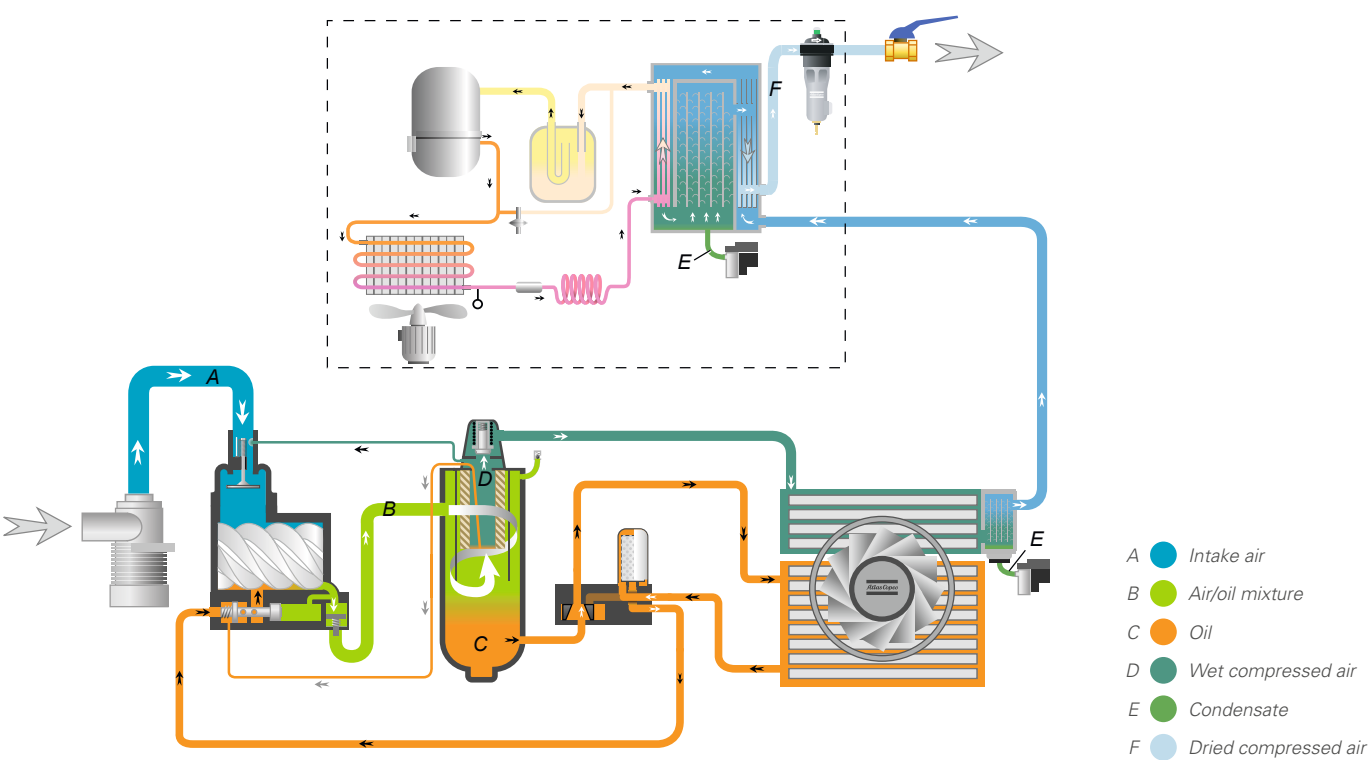
• : Optional - : Not available

# FLOW CHART

Fixed speed: GA<sup>+</sup> & GA



Variable Speed Drive: GA VSD



# TECHNICAL SPECIFICATIONS 50 Hz

| TYPE               | Working pressure |      |                           |      | Capacity FAD <sup>1</sup> |                     |      | Installed motor power |     | Noise level <sup>2</sup> | Weight   |      |              |      |
|--------------------|------------------|------|---------------------------|------|---------------------------|---------------------|------|-----------------------|-----|--------------------------|----------|------|--------------|------|
|                    | Standard         |      | Full Feature <sup>3</sup> |      |                           |                     |      |                       |     |                          | 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  |
| GA 90 <sup>+</sup> | 5.5              | 80   | 5.3                       | 77   | 336                       | 20.2                | 712  | 90                    | 125 | 74                       | 3000     | 6614 | 3393         | 7480 |
|                    | 7.5              | 109  | 7.3                       | 106  | 293                       | 17.6                | 621  | 90                    | 125 | 74                       | 3000     | 6614 | 3393         | 7480 |
|                    | 8.5              | 123  | 8.3                       | 120  | 280                       | 16.8                | 593  | 90                    | 125 | 74                       | 3000     | 6614 | 3393         | 7480 |
|                    | 10               | 145  | 9.8                       | 142  | 253                       | 15.2                | 536  | 90                    | 125 | 74                       | 3000     | 6614 | 3393         | 7480 |
| GA 110             | 5.5              | 80   | 5.3                       | 77   | 402                       | 24.1                | 852  | 110                   | 150 | 74                       | 3100     | 6834 | 3493         | 7701 |
|                    | 7.5              | 109  | 7.3                       | 106  | 364                       | 21.8                | 771  | 110                   | 150 | 74                       | 3100     | 6834 | 3493         | 7701 |
|                    | 8.5              | 123  | 8.3                       | 120  | 340                       | 20.4                | 720  | 110                   | 150 | 74                       | 3100     | 6834 | 3493         | 7701 |
|                    | 10               | 145  | 9.8                       | 142  | 312                       | 18.7                | 661  | 110                   | 150 | 74                       | 3100     | 6834 | 3493         | 7701 |
| GA 132             | 14               | 203  | 13.8                      | 200  | 239                       | 14.3                | 506  | 110                   | 150 | 74                       | 3100     | 6834 | 3493         | 7701 |
|                    | 5.5              | 80   | 5.3                       | 77   | 474                       | 28.4                | 1004 | 132                   | 175 | 74                       | 3375     | 7441 | 3768         | 8307 |
|                    | 7.5              | 109  | 7.3                       | 106  | 430                       | 25.8                | 911  | 132                   | 175 | 74                       | 3375     | 7441 | 3768         | 8307 |
|                    | 8.5              | 123  | 8.3                       | 120  | 401                       | 24.1                | 850  | 132                   | 175 | 74                       | 3375     | 7441 | 3768         | 8307 |
| GA 160             | 10               | 145  | 9.8                       | 142  | 373                       | 22.4                | 790  | 132                   | 175 | 74                       | 3375     | 7441 | 3768         | 8307 |
|                    | 14               | 203  | 13.8                      | 200  | 300                       | 18.0                | 636  | 132                   | 175 | 74                       | 3375     | 7441 | 3768         | 8307 |
|                    | 7.5              | 109  | 7.3                       | 106  | 508                       | 30.5                | 1076 | 160                   | 215 | 74                       | 3440     | 7584 | 3833         | 8451 |
|                    | 8.5              | 123  | 8.3                       | 120  | 485                       | 29.1                | 1028 | 160                   | 215 | 74                       | 3440     | 7584 | 3833         | 8451 |
| GA 160             | 10               | 145  | 9.8                       | 142  | 452                       | 27.1                | 958  | 160                   | 215 | 74                       | 3440     | 7584 | 3833         | 8451 |
|                    | 14               | 203  | 13.8                      | 200  | 361                       | 21.7                | 765  | 160                   | 215 | 74                       | 3440     | 7584 | 3833         | 8451 |

| Type<br>50 Hz           |         | Working pressure |      |                           |      | Capacity FAD <sup>1</sup> |                     |            | Installed<br>motor<br>power | Noise<br>level <sup>2</sup> | Weight   |      |              |      |
|-------------------------|---------|------------------|------|---------------------------|------|---------------------------|---------------------|------------|-----------------------------|-----------------------------|----------|------|--------------|------|
|                         |         | Standard         |      | Full Feature <sup>3</sup> |      | Standard / Full Feature   |                     |            |                             |                             | Standard |      | Full Feature |      |
|                         |         | bar(e)           | psig | bar(e)                    | psig | l/s                       | m <sup>3</sup> /min | cfm        | kW                          | dB(A)                       | kg       | lbs  | kg           | lbs  |
| GA 110 VSD -<br>8.5 bar | Minimum | 5                | 72   | 5                         | 72   | 128 - 437                 | 7.7 - 26.2          | 271 - 926  | 110                         | 78                          | 3375     | 7441 | 4015         | 8851 |
|                         | Nominal | 7                | 101  | 7                         | 101  | 128 - 392                 | 7.7 - 23.5          | 271 - 831  |                             |                             |          |      |              |      |
|                         | Maximum | 8.5              | 123  | 8.3                       | 120  | 154 - 359                 | 9.2 - 21.5          | 326 - 761  |                             |                             |          |      |              |      |
| GA 110 VSD -<br>10 bar  | Minimum | 6                | 87   | 6                         | 87   | 182 - 411                 | 10.9 - 24.7         | 386 - 871  | 110                         | 78                          | 3375     | 7441 | 3975         | 8763 |
|                         | Nominal | 9.5              | 138  | 9.5                       | 138  | 177 - 334                 | 10.6 - 20.0         | 375 - 708  |                             |                             |          |      |              |      |
|                         | Maximum | 10               | 145  | 9.8                       | 142  | 176 - 325                 | 10.6 - 19.5         | 373 - 689  |                             |                             |          |      |              |      |
| GA 110 VSD -<br>14 bar  | Minimum | 9                | 131  | 9                         | 131  | 178 - 344                 | 10.7 - 20.6         | 377 - 729  | 110                         | 78                          | 3375     | 7441 | 3950         | 8708 |
|                         | Nominal | 13.5             | 196  | 12.5                      | 181  | 166 - 266                 | 10.0 - 16.0         | 352 - 564  |                             |                             |          |      |              |      |
|                         | Maximum | 14               | 203  | 12.8                      | 185  | 165 - 258                 | 9.9 - 15.5          | 350 - 547  |                             |                             |          |      |              |      |
| GA 132 VSD -<br>8.5 bar | Minimum | 5                | 72   | 5                         | 72   | 128 - 513                 | 7.7 - 30.8          | 271 - 1087 | 132                         | 78                          | 3415     | 7529 | 4050         | 8929 |
|                         | Nominal | 7                | 101  | 7                         | 101  | 128 - 463                 | 7.7 - 27.8          | 271 - 981  |                             |                             |          |      |              |      |
|                         | Maximum | 8.5              | 123  | 8.3                       | 120  | 154 - 426                 | 9.2 - 25.6          | 326 - 903  |                             |                             |          |      |              |      |
| GA 132 VSD -<br>10 bar  | Minimum | 6                | 87   | 6                         | 87   | 182 - 484                 | 10.9 - 29.0         | 386 - 1026 | 132                         | 78                          | 3415     | 7529 | 4050         | 8929 |
|                         | Nominal | 9.5              | 138  | 9.5                       | 138  | 177 - 399                 | 10.6 - 23.9         | 375 - 845  |                             |                             |          |      |              |      |
|                         | Maximum | 10               | 145  | 9.8                       | 142  | 176 - 389                 | 10.6 - 23.3         | 373 - 824  |                             |                             |          |      |              |      |
| GA 132 VSD -<br>14 bar  | Minimum | 9                | 131  | 9                         | 131  | 178 - 409                 | 10.7 - 24.5         | 377 - 867  | 132                         | 78                          | 3415     | 7529 | 4050         | 8929 |
|                         | Nominal | 13.5             | 196  | 12.5                      | 181  | 166 - 324                 | 10.0 - 19.4         | 352 - 687  |                             |                             |          |      |              |      |
|                         | Maximum | 14               | 203  | 12.8                      | 185  | 165 - 316                 | 9.9 - 19.0          | 350 - 670  |                             |                             |          |      |              |      |
| GA 160 VSD -<br>8.5 bar | Minimum | 5                | 72   | 5                         | 72   | 128 - 569                 | 7.7 - 34.1          | 271 - 1206 | 160                         | 78                          | 3515     | 7749 | 4155         | 9160 |
|                         | Nominal | 7                | 101  | 7                         | 101  | 128 - 548                 | 7.7 - 32.9          | 271 - 1161 |                             |                             |          |      |              |      |
|                         | Maximum | 8.5              | 123  | 8.3                       | 120  | 154 - 507                 | 9.2 - 30.4          | 326 - 1074 |                             |                             |          |      |              |      |
| GA 160 VSD -<br>10 bar  | Minimum | 6                | 87   | 6                         | 87   | 182 - 565                 | 10.9 - 33.9         | 385 - 1197 | 160                         | 78                          | 3515     | 7749 | 4155         | 9160 |
|                         | Nominal | 9.5              | 138  | 9.5                       | 138  | 177 - 477                 | 10.6 - 28.6         | 375 - 1011 |                             |                             |          |      |              |      |
|                         | Maximum | 10               | 145  | 9.8                       | 142  | 176 - 466                 | 10.6 - 28.0         | 373 - 987  |                             |                             |          |      |              |      |
| GA 160 VSD -<br>14 bar  | Minimum | 9                | 131  | 9                         | 131  | 178 - 489                 | 10.7 - 29.3         | 377 - 1036 | 160                         | 78                          | 3515     | 7749 | 4155         | 9160 |
|                         | Nominal | 13.5             | 196  | 12.5                      | 181  | 166 - 395                 | 10.0 - 23.7         | 352 - 837  |                             |                             |          |      |              |      |
|                         | Maximum | 14               | 203  | 12.8                      | 185  | 165 - 385                 | 9.9 - 23.1          | 350 - 816  |                             |                             |          |      |              |      |

(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, Lp 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 (37°F).

FAD(1) is measured at the following working pressures:

8.5 bar version at 7 bar (Standard & FF)

10 bar version at 9.5 bar (Standard & FF)

14 bar version at 13.5 bar (Standard) / 12.5 bar (FF)

## DIMENSIONS

| Type                                                     | Standard |      |      |      |    |    | Full Feature |      |      |      |    |    |
|----------------------------------------------------------|----------|------|------|------|----|----|--------------|------|------|------|----|----|
|                                                          | L        | W    | H    | L    | W  | H  | L            | W    | H    | L    | W  | H  |
|                                                          | mm       |      |      | inch |    |    | mm           |      |      | inch |    |    |
| GA 90 <sup>+</sup> /GA 110-160 air-cooled & water-cooled | 2800     | 2000 | 2000 | 111  | 79 | 79 | 3700         | 2000 | 2000 | 146  | 79 | 79 |
| GA 110-160 VSD air-cooled                                | 3200     | 2000 | 2347 | 126  | 79 | 92 | 3800         | 2002 | 2347 | 150  | 79 | 92 |
| GA 110-160 VSD water-cooled                              | 3200     | 1630 | 2347 | 126  | 64 | 92 | 3200         | 1630 | 2347 | 126  | 64 | 92 |

# TECHNICAL SPECIFICATIONS 60 Hz

| TYPE   | Working pressure |      |                           |      | Capacity FAD <sup>1</sup> |        |      | Installed motor power |     | Noise level <sup>2</sup> | Weight   |      |              |      |
|--------|------------------|------|---------------------------|------|---------------------------|--------|------|-----------------------|-----|--------------------------|----------|------|--------------|------|
|        | Standard         |      | Full Feature <sup>3</sup> |      |                           |        |      |                       |     |                          | Standard |      | Full Feature |      |
|        | bar(e)           | psig | bar(e)                    | psig | l/s                       | m³/min | cfm  | kW                    | hp  | dB(A)                    | kg       | lbs  | kg           | lbs  |
| GA 90* | 5.5              | 80   | 5.3                       | 77   | 343                       | 20.5   | 727  | 90                    | 125 | 74                       | 3000     | 6614 | 3393         | 7480 |
|        | 7.4              | 107  | 7.2                       | 104  | 302                       | 18.1   | 640  | 90                    | 125 | 74                       | 3000     | 6614 | 3393         | 7480 |
|        | 9.1              | 132  | 8.9                       | 129  | 274                       | 16.4   | 581  | 90                    | 125 | 74                       | 3000     | 6614 | 3393         | 7480 |
|        | 10.9             | 158  | 10.7                      | 155  | 239                       | 14.3   | 506  | 90                    | 125 | 74                       | 3000     | 6614 | 3393         | 7480 |
|        | 5.5              | 80   | 5.3                       | 77   | 406                       | 24.3   | 860  | 110                   | 150 | 74                       | 3100     | 6834 | 3493         | 7701 |
|        | 7.4              | 107  | 7.2                       | 104  | 363                       | 21.7   | 769  | 110                   | 150 | 74                       | 3100     | 6834 | 3493         | 7701 |
|        | 9.1              | 132  | 8.9                       | 129  | 331                       | 19.8   | 701  | 110                   | 150 | 74                       | 3100     | 6834 | 3493         | 7701 |
|        | 10.9             | 158  | 10.7                      | 155  | 295                       | 17.7   | 625  | 110                   | 150 | 74                       | 3100     | 6834 | 3493         | 7701 |
|        | 14               | 203  | 13.5                      | 196  | 248                       | 14.9   | 525  | 110                   | 150 | 74                       | 3100     | 6834 | 3493         | 7701 |
|        | 5.5              | 80   | 5.3                       | 77   | 467                       | 28.0   | 990  | 132                   | 175 | 74                       | 3375     | 7441 | 3768         | 8307 |
| GA 132 | 7.4              | 107  | 7.2                       | 104  | 421                       | 25.2   | 892  | 132                   | 175 | 74                       | 3375     | 7441 | 3768         | 8307 |
|        | 9.1              | 132  | 8.9                       | 129  | 385                       | 23.1   | 816  | 132                   | 175 | 74                       | 3375     | 7441 | 3768         | 8307 |
|        | 10.9             | 158  | 10.7                      | 155  | 346                       | 20.7   | 733  | 132                   | 175 | 74                       | 3375     | 7441 | 3768         | 8307 |
|        | 14               | 203  | 13.5                      | 196  | 290                       | 17.4   | 614  | 132                   | 175 | 74                       | 3375     | 7441 | 3768         | 8307 |
|        | 7.4              | 107  | 7.2                       | 104  | 475                       | 28.4   | 1006 | 160                   | 215 | 74                       | 3440     | 7584 | 3833         | 8451 |
|        | 9.1              | 132  | 8.9                       | 129  | 437                       | 26.2   | 926  | 160                   | 215 | 74                       | 3440     | 7584 | 3833         | 8451 |
| GA 160 | 10.9             | 158  | 10.7                      | 155  | 397                       | 23.8   | 841  | 160                   | 215 | 74                       | 3440     | 7584 | 3833         | 8451 |
|        | 14               | 203  | 13.5                      | 196  | 337                       | 20.2   | 714  | 160                   | 215 | 74                       | 3440     | 7584 | 3833         | 8451 |

| Type<br>60 Hz                          |         | Working pressure |      |               |      | Capacity FAD¹           |             |            | Installed<br>motor<br>power | Noise<br>level² | Weight                  |      |      |      |
|----------------------------------------|---------|------------------|------|---------------|------|-------------------------|-------------|------------|-----------------------------|-----------------|-------------------------|------|------|------|
|                                        |         | Standard         |      | Full Feature³ |      | Standard / Full Feature |             |            |                             |                 | Standard / Full Feature |      |      |      |
|                                        |         | bar(e)           | psig | bar(e)        | psig | l/s                     | m³/min      | cfm        | kW                          | dB(A)           | kg                      | lbs  | kg   | lbs  |
| GA 110 VSD -<br>8,6 bar<br>(125 psi)   | Minimum | 5                | 72   | 5             | 72   | 128 - 437               | 7.7 - 26.2  | 271 - 926  | 110                         | 78              | 3375                    | 7441 | 4015 | 8851 |
|                                        | Nominal | 6.9              | 100  | 6.9           | 100  | 128 - 394               | 7.7 - 23.6  | 271 - 835  |                             |                 |                         |      |      |      |
|                                        | Maximum | 9.1              | 132  | 8.9           | 129  | 154 - 349               | 9.2 - 20.9  | 326 - 739  |                             |                 |                         |      |      |      |
| GA 110 VSD -<br>10,4 bar<br>(150 psi)  | Minimum | 6                | 87   | 6             | 87   | 182 - 411               | 10.9 - 24.7 | 386 - 871  | 110                         | 78              | 3375                    | 7441 | 3975 | 8763 |
|                                        | Nominal | 10.4             | 151  | 10.4          | 151  | 175 - 317               | 10.5 - 19.0 | 371 - 672  |                             |                 |                         |      |      |      |
|                                        | Maximum | 10.9             | 158  | 10.7          | 155  | 174 - 308               | 10.4 - 18.5 | 369 - 653  |                             |                 |                         |      |      |      |
| GA 110 VSD -<br>13,8 bar<br>(200 psi)  | Minimum | 9                | 131  | 9             | 131  | 178 - 344               | 10.7 - 20.6 | 377 - 729  | 110                         | 78              | 3375                    | 7441 | 3950 | 8708 |
|                                        | Nominal | 13.5             | 196  | 12.5          | 181  | 166 - 266               | 10.0 - 16.0 | 352 - 564  |                             |                 |                         |      |      |      |
|                                        | Maximum | 14               | 203  | 12.8          | 185  | 165 - 258               | 9.9 - 15.5  | 350 - 547  |                             |                 |                         |      |      |      |
| GA 132 VSD -<br>8,6 bar<br>(125 psi)   | Minimum | 5                | 72   | 5             | 72   | 128 - 513               | 7.7 - 30.8  | 271 - 1087 | 132                         | 78              | 3415                    | 7529 | 4050 | 8929 |
|                                        | Nominal | 6.9              | 100  | 6.9           | 100  | 128 - 465               | 7.7 - 27.9  | 271 - 985  |                             |                 |                         |      |      |      |
|                                        | Maximum | 9.1              | 132  | 8.9           | 129  | 154 - 414               | 9.2 - 24.8  | 326 - 877  |                             |                 |                         |      |      |      |
| GA 132 VSD -<br>10,4 bar<br>(150 psi)  | Minimum | 6                | 87   | 6             | 87   | 182 - 484               | 10.9 - 29.0 | 386 - 1026 | 132                         | 78              | 3415                    | 7529 | 4050 | 8929 |
|                                        | Nominal | 10.4             | 151  | 10.4          | 151  | 175 - 380               | 10.5 - 22.8 | 371 - 805  |                             |                 |                         |      |      |      |
|                                        | Maximum | 10.9             | 158  | 10.7          | 155  | 174 - 370               | 10.4 - 22.2 | 369 - 784  |                             |                 |                         |      |      |      |
| GA 132 VSD -<br>13,8 bar<br>(200 psi)  | Minimum | 9                | 131  | 9             | 131  | 178 - 409               | 10.7 - 24.5 | 377 - 867  | 132                         | 78              | 3415                    | 7529 | 4050 | 8929 |
|                                        | Nominal | 13.5             | 196  | 12.5          | 181  | 166 - 324               | 10.0 - 19.4 | 352 - 687  |                             |                 |                         |      |      |      |
|                                        | Maximum | 14               | 203  | 12.8          | 185  | 165 - 316               | 9.9 - 19.0  | 350 - 670  |                             |                 |                         |      |      |      |
| GA 160 VSD -<br>8,6 bar<br>(125 psi)   | Minimum | 5                | 72   | 5             | 72   | 128 - 569               | 7.7 - 34.1  | 271 - 1206 | 160                         | 78              | 3515                    | 7749 | 4155 | 9160 |
|                                        | Nominal | 6.9              | 100  | 6.9           | 100  | 128 - 551               | 7.7 - 33.1  | 271 - 1168 |                             |                 |                         |      |      |      |
|                                        | Maximum | 9.1              | 132  | 8.9           | 129  | 154 - 494               | 9.2 - 29.6  | 326 - 1047 |                             |                 |                         |      |      |      |
| GA 160 VSD -<br>10,4 bar<br>(150 psi)  | Minimum | 6                | 87   | 6             | 87   | 182 - 565               | 10.9 - 33.9 | 386 - 1197 | 160                         | 78              | 3515                    | 7749 | 4155 | 9160 |
|                                        | Nominal | 10.4             | 151  | 10.4          | 151  | 175 - 456               | 10.5 - 27.4 | 371 - 966  |                             |                 |                         |      |      |      |
|                                        | Maximum | 10.9             | 158  | 10.7          | 155  | 174 - 444               | 10.4 - 26.6 | 369 - 941  |                             |                 |                         |      |      |      |
| GA 160 VSD - 1<br>3,8 bar<br>(200 psi) | Minimum | 9                | 131  | 9             | 131  | 178 - 489               | 10.7 - 29.3 | 377 - 1036 | 160                         | 78              | 3515                    | 7749 | 4155 | 9160 |
|                                        | Nominal | 13.5             | 196  | 12.5          | 181  | 166 - 395               | 10.0 - 23.7 | 352 - 837  |                             |                 |                         |      |      |      |
|                                        | Maximum | 14               | 203  | 12.8          | 185  | 165 - 385               | 9.9 - 23.1  | 350 - 816  |                             |                 |                         |      |      |      |

(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, Lp 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 (37°F).

FAD(1) is measured at the following working pressures:

- 125 psi version at 100 psi (Standard & FF)
- 150 psi version at 150 psi (Standard & FF)
- 200 psi version at 196 psi (Standard) / 181 psi (FF)

# DIMENSIONS

| TYPE                                        | Standard |      |      |      |    |    | 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 | 2800     | 2000 | 2000 | 111  | 79 | 79 | 3700         | 2000 | 2000 | 146  | 79 | 79 |
| GA 110-160 VSD air-cooled                   | 3200     | 2000 | 2347 | 126  | 79 | 92 | 3800         | 2002 | 2347 | 150  | 79 | 92 |
| GA 110-160 VSD water-cooled                 | 3200     | 1630 | 2347 | 126  | 64 | 92 | 3200         | 1630 | 2347 | 126  | 64 | 92 |

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

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