KAESER COMPRESSORS®

Built for a lifetime.

Sigma Frequency Control

SFC Series 8 - 22S

Capacities from: 10 to 164 cfm
Pressures from: 80 to 217 psig

kaeser.com

SFC 8 - 22S

Variable speed technology from Kaeser

Kaeser Compressors' Sigma Frequency Control (SFC) rotary screw compressors are the perfect solution for smaller compressed air systems with varying air demand to achieve significant energy savings while maintaining stable pressure. Kaeser SFC units are up to 18% more efficient than the competition.

Meeting varying loads

Most compressed air systems have varying loads, and it is often effective and efficient to apply multiple compressors to meet changing demand. In cases where the demand profile changes rapidly and frequently, variable frequency drive compressors may also be recommended. By varying the frequency of the input electricity to the motor, these compressors speed up and slow down to match their air output to your demand.

Precise pressure control

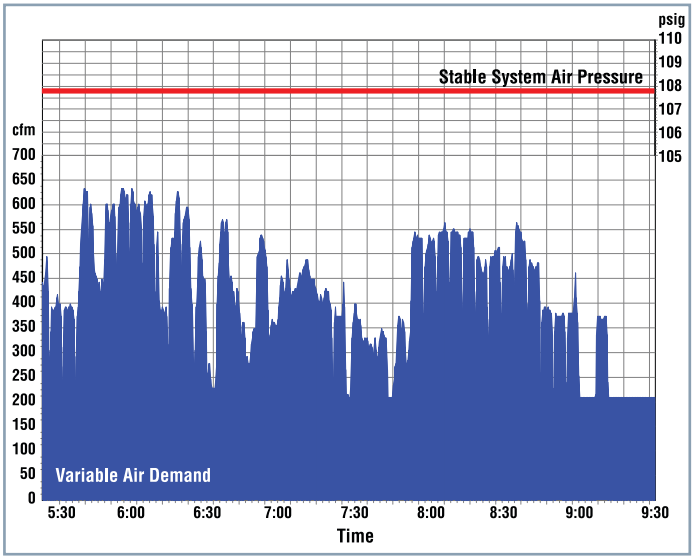
Kaeser's SFC design includes highly accurate sensors to maintain stable pressure (±1.5 psig), without wasting air by over pressurizing the system (see Graph 1). This also increases reliability and product quality in your plant.

Superior part-load performance

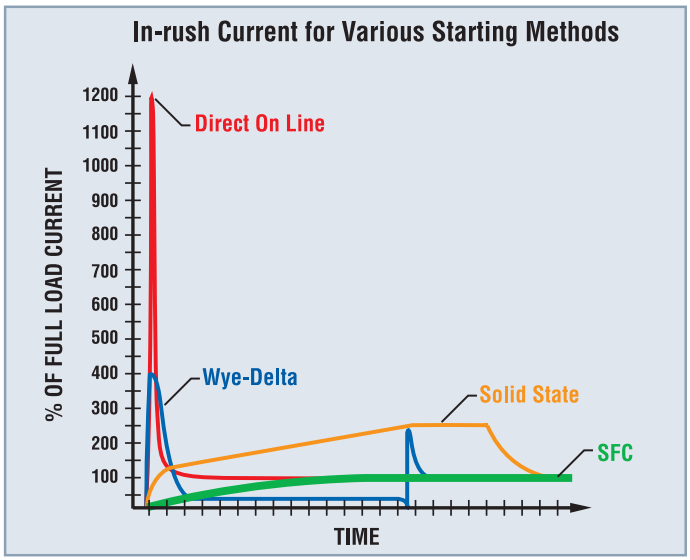
Kaeser's SFC units have superior part-load performance and make great trim load machines. They can be easily integrated into a multi-compressor system to provide faster response to variations in air consumption. At the same time, they can reduce electricity costs since their electrical consumption varies directly with air production.

The ultimate soft start

Our frequency drives are the ultimate soft starter for your motor, using the lowest start-up current (see Graph 2). They eliminate heat spikes in motor windings, allowing unlimited motor starts. Of course, frequency drives usually have fewer starts/stops, which means less frequent loading and unloading, for less wear and tear on important mechanical components.



Graph 1



Graph 2


KAESER
SIGMA
SFC 18ST

Designed for reliability, simplicity, and performance

Sigma Profile™ airend

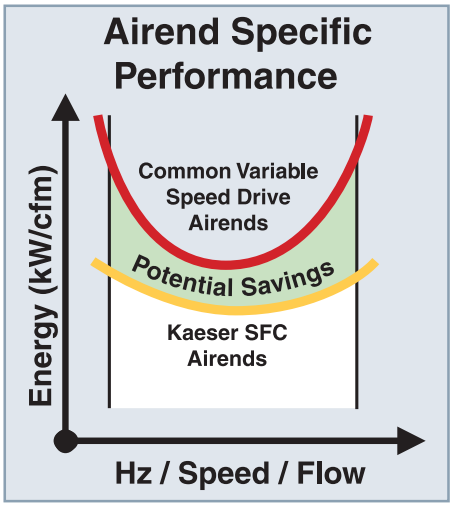
Our single-stage, fluid-cooled Sigma Profile airend delivers pressures up to 217 psig. Our airends are precision machined and optimized in size and profile to match the airend speeds with their best specific performance. Unlike the competition, Kaeser Compressors makes many different airends so that we can apply them at their optimal speed and performance (see Graph 3).

TEFC motor with reduced voltage starter

Premium-efficiency, totally enclosed, fan cooled (TEFC) motors with Class F insulation provide long life in harsh environments. The motors are manufactured by Siemens so they can be best paired with the Siemens drive technology. 460 or 575 V, 3-phase, 60 Hz is standard. Other voltages are available.

Superior cooling fans

Our cooling fan design increases air flow through the compressor package while reducing overall power requirements and sound levels. It also ensures the unit can safely operate even under severe operating conditions.



Graph 3

Belt drive with automatic tensioning

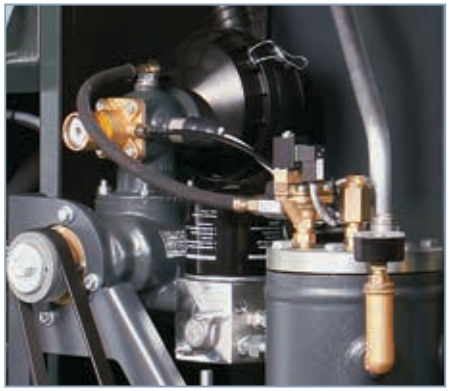
Our unique automatic tensioning device maintains proper tension to maximize energy efficiency, prolong belt life, and simplify routine maintenance. The belt tension can easily be verified through a window in the service panel.

Efficient separator system

A three-stage separator (ASME or CRN) combines centrifugal action and a 2-stage coalescing filter to reduce fluid carry over to 2 ppm or less. Quick release fittings, drain and fill ports are arranged for fast and easy fluid changes from sump and cooler without any pumping device. The easy-to-read fluid level indicator can be safely checked through a window in the service panel while the compressor is running.

High-efficiency coolers with filter mat

Conveniently located on the outside of the unit, our standard high-efficiency coolers provide maximum cooling resulting in exceptionally low approach temperatures for more moisture separation at the compressor discharge and better air quality. A cleanable filter mat simplifies cooler maintenance, extends cooler service intervals, and increases thermal reserve for harsher conditions.



Fluid cooling system

Units are filled with Kaeser Premium Fluid to cool, clean, and lubricate the airend. A thermostatically controlled combination valve ensures perfect fluid temperature regulation and incorporates a cooler by-pass. Main air and fluid lines are made of rigid pipe with flexible connections. A 10 micron spin-on fluid filter extends fluid life, protects the airend, and is easy to access.

Enclosure

Our superior cabinet design reduces noise and footprint while offering easy access for service. A heavy-duty metal enclosure with a durable powder-coated finish keeps noise in but dirt and dust out. Thick sound insulation keeps sound levels as low as 68 dB(A), up to 10 dB(A) quieter than comparable units.

Lockable panels provide both safety and easy access to all maintenance items. Electrical components are housed in a spacious, ventilated control cabinet. Wiring is neatly arranged and terminals are clearly identified.

Internal and external vibration isolators eliminate stress on piping and wire connections, further increasing reliability.

Parallel cooling design

The coolers and drive motor have separate cooling air inlet zones to ensure optimum cooling. Drawing ambient air directly across the coolers and motor through separate zones eliminates preheating and results in longer lubricant life and a cooler running motor. This also results in much lower approach temperatures, improving moisture separation and air quality.

To increase reliability and reduce maintenance costs, the coolers are conveniently located on the outside of the unit, where dust and dirt build-up are easily seen and can be removed without dismantling the cooler. Top exhaust allows for easy heat recovery and reduces the system footprint.

Intelligent control and protection

To protect your investment and ensure the most efficient operation possible, these compressors are equipped with our Sigma Control 2™. This intelligent controller comes standard with multiple pre-programmed control profiles so you can select the one that best fits your application. Sigma Control 2 monitors more than 20 critical operating parameters, shuts the unit down to prevent damage, and signals if immediate service is required. It also tracks preventive maintenance intervals and provides notice when PMs are due. An RFID sensor provides secure access and simplifies managing maintenance intervals. An SD card slot with included SD card enables fast, easy software updates, storing key operational parameters, and offers long-term data storage for analyzing energy consumption and compressor operation. Sigma Control 2 has an Ethernet port and built-in web-server for easy remote monitoring.

The optional Sigma Control 2 with communications port can be fitted with communication modules like ModBus, EtherNet/IP, Profibus®, Devicenet®, Profinet®, or other industrial communications interfaces as a plug-in option for seamless integration into plant control/monitoring systems.

See our Sigma Control 2 brochure for more information.

SFC drive features

- Operates across a very wide range of flow (20 -100%) while maintaining a safe operating temperature.
- Dedicated drive cabinet cooling fans for better ventilation and reliability, even in extreme conditions.
- Electromagnetic interference (EMI) filters are used to mitigate external sources of feedback and electrical noise from the plant electrical grid.
- Safety features prevent the motor from unintentionally starting. When the unit is switched off or the emergency stop is pushed, all power is cut to the motor.
- Shielded motor cables reduce electromagnetic radiation that may affect other electrical devices.
- Siemens drives for the latest technology, reliability, world wide support, and easy integration into system controls.

Service-friendly Design

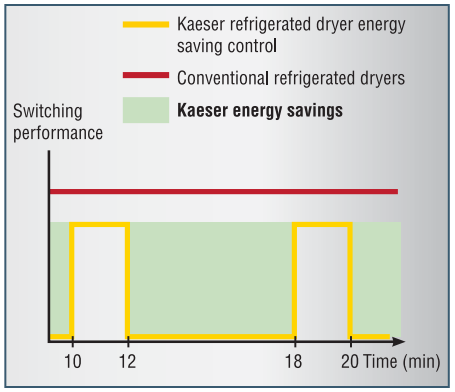
The SFC 8 - 22S rotary screw compressors feature an open package layout. All of the major components are easily accessible reducing preventive maintenance time by as much as 50% when compared to other similarly sized units.

When you consider the energy efficiency savings and the maintenance costs savings, it's clear that owning a *built for a lifetime™* Kaeser compressor will save you money, year after year.

Integrated dryer option

Premium compressed air quality

The integrated dryer is perfectly sized for the full flow of the compressor. The dryer is located in a separate cabinet to prevent heat transfer from the compressor. This improves dryer performance.



Energy-saving control

The integrated refrigerated dryer in Kaeser units provides high efficiency performance thanks to its energy-saving control. The dryer is active only when compressed air actually needs to be dried. This approach achieves the required compressed air quality with maximum efficiency.

Superior heat exchanger

The dryer's heat exchanger is corrosion and contamination-resistant. The superior design ensures excellent heat transfer characteristics with exceptionally low pressure drop, for the best in reliable, energy efficient operation.

Eco-Drain

The integrated refrigerated dryer also features a zero loss Eco-Drain. The advanced level-controlled condensate drain eliminates the compressed air losses associated with solenoid valve drains. This saves energy and considerably enhances the reliability of the compressed air supply.

Reliable moisture separation

The moisture separator reliably removes the accumulating condensate from the air, even with fluctuating airflow. Kaeser's no-maintenance design ensures condensate is separated without adding pressure drop.

Complete compressed air systems

Life just got easier

Our SFC 8 - 15 models are also available as AIRCENTERs. These space-saving packages reduce installation time and expense. Packages with cycling refrigerated dryers are also available.

AIRCENTER

To simplify your compressed air system, Kaeser offers the AIRCENTER. This factory-built package combines essential system components in one easy-to-install unit. AIRCENTERS come completely assembled and include a refrigerated dryer with automatic condensate drain, receiver tank, and an optional filtration package. The small footprint and super quiet operation let you place the system almost anywhere, while the energy efficiency, easy maintenance, and Kaeser durability offer the lowest possible life cycle cost.

Compressed air system assessments

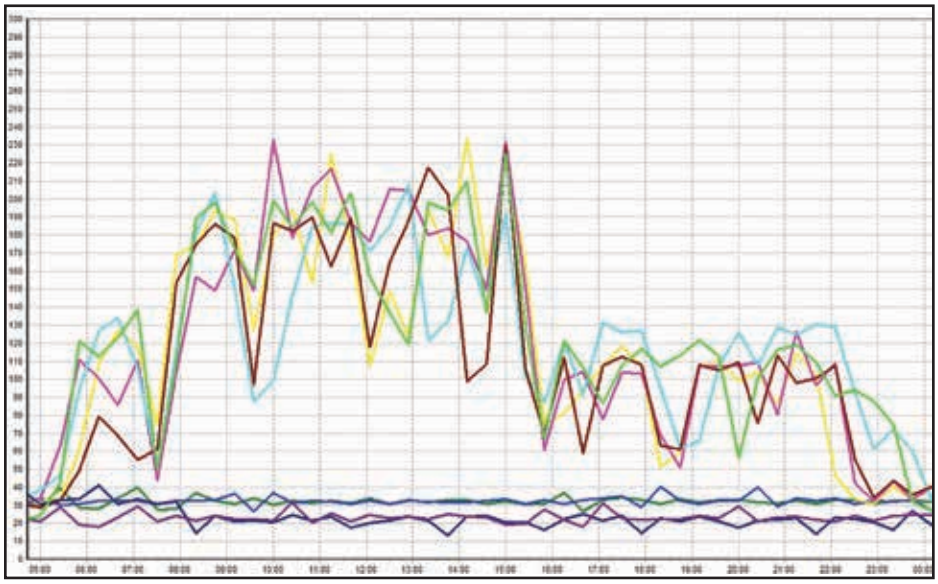
Measure and manage

In the course of helping thousands of customers save millions of dollars through compressed air energy best practices we have improved conventional air audit techniquies to develop our unique **Kaeser Air Demand Analysis** (ADA) program. No other approach of compressed air system analysis offers this combination of comprehensiveness, convenience, and affordability.

Suitable for analyzing large or small systems, Kaeser's ADA is an exceptional asset management tool. With the data we gather, our compressed air specialists identify areas for improvement in both energy savings, air delivery, and pressure stability throughout your plant.

To obtain a detailed, accurate picture of your compressed air demand and system dynamics, we install a variety of instruments and sensors customized to your unique system. Key parameters measured are pressure, flow, and power consumption. Since you pay for kWh, we measure kilowatts—not amps—to give the most accurate cost calculation. Our approach creates a complete picture of system activity – including leaks, which are often most apparent during off-peak production periods.

Using our unique ADA software, we identify waste and poor practices, such as leaks or artificial demand caused by operating at unnecessarily high pressures. It also shows energy loss due to pressure drop in distribution piping.



We create detailed time-stamped charts from the recorded data. These are used to analyze your system from several perspectives and offer insight into your operating activities and corresponding air requirements.

This step also helps identify deficiencies in the air supply, storage, or piping along with any control issues.

Kaeser Energy Savings System

We use our powerful ***Kaeser Energy Savings System*** (KESS) software to simulate power requirements of different system scenarios. This helps identify solutions that will achieve the greatest efficiency without compromising pressure/flow requirements or system reliability.

Analysis and Recommendations

Your Air Demand Analysis from Kaeser isn't complete until we issue our final analysis and recommendations. This includes a side-by-side comparison of multiple scenarios showing their purchase price, energy costs, and savings.

Recommendations often focus on making adjustments to controls, storage, or piping rather than buying new equipment. Armed with these ideas, you'll be able to determine the most cost-effective system changes.

Technical specifications

Model	Pressure Range (1) (psig)	*Capacity for 460V (2) (cfm) Min	Max	Rated Motor Power (hp)	Dimensions W x D x H (in.)	Weight (3) (lb.)	Sound Level (4) (dB(A))
SFC 8 SFC 8T	110	12.4	50.1	10	24¾ x 31 x 43¼ 24¾ x 43 x 43¼	551 717	68
	125	12.4	48.0				
SFC 11 SFC 11T	110	21.9	75.6	15	29½ x 35¼ x 49½ 29½ x 48¾ x 49½	725 891	68
	125	21.5	71.7				
SFC 15 SFC 15T	110	28.6	97.8	20		743 908	69
	125	28.3	95.0				
SFC 18S SFC 18ST	110	33.2	126.8	25	31½ x 43⅞ x 60¼ 31½ x 57½ x 60¼	1169 1378	70
	125	33.2	119.4				
SFC 22S SFC 22ST	110	33.2	148.7	30		1213 1422	72
	125	33.2	140.9				

Performance data values are only valid for 460V/3 ph/60 Hz. Please consult Kaeser for 575V availability and data.

(1) Other pressures available from 80 to 217 psig. (2) Performance rated in accordance with ISO 1217, Annex E test code. (3) Weights may vary slightly depending on airend model. (4) Per ISO 2151 using ISO 9614-2.

Specifications are subject to change without notice.

CAGI

Certified Performance

Our compressors' energy efficiency has been tested and confirmed by an independent laboratory as part of the Compressed Air and Gas Institute's *Rotary Screw Compressor Performance Verification Program*. CAGI data sheets are available for screw compressors from 5 to 200 hp at us.kaeser.com/cagi.

The world is our home

As one of the world's largest compressed air systems providers and compressor manufacturers, Kaeser Compressors is represented throughout the world by a comprehensive network of branches, subsidiary companies and factory trained partners.

With innovative products and services, Kaeser Compressors' experienced consultants and engineers help customers to enhance their competitive edge by working in close partnership to develop progressive system concepts that continuously push the boundaries of performance and compressed air efficiency. Every Kaeser customer benefits from the decades of knowledge and experience gained from hundreds of thousands of installations worldwide and over ten thousand formal compressed air system audits.

These advantages, coupled with Kaeser's worldwide service organization, ensure that our compressed air products and systems deliver superior performance with maximum uptime.

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