KAESER COMPRESSORS

Built for a lifetime.™

Sigma Frequency Control

SFC Series 18 to 515

Capacities: from 22 to 3069 cfm
Pressures: from 80 to 217 psig

Variable Speed Technology from Kaeser

Most compressed air systems have varying loads and it is often more effective and efficient to apply multiple compressors to meet changing demand. In cases where the demand profile changes more rapidly and frequently, variable frequency drive (AKA variable speed) 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.

Superior part-load performance

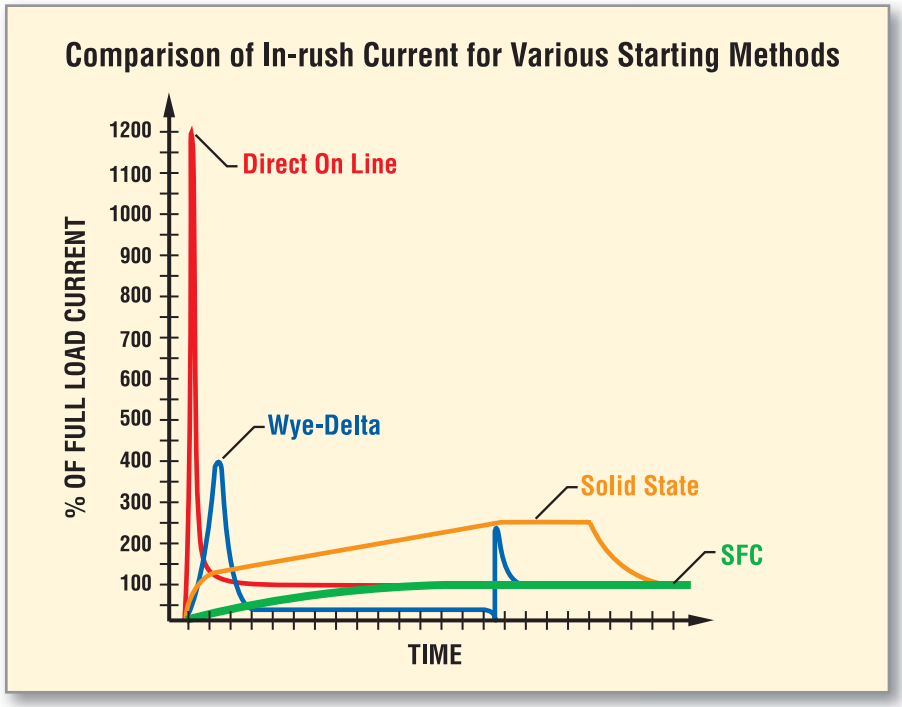
Kaeser's Sigma Frequency Control (SFC) units have superior part-load performance and make great trim load machines. They can be easily integrated into a multi-compressor system to provide faster response to variations in air consumption. At the same time, they can reduce electricity costs since their 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 1). 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 parts.

Precise pressure control

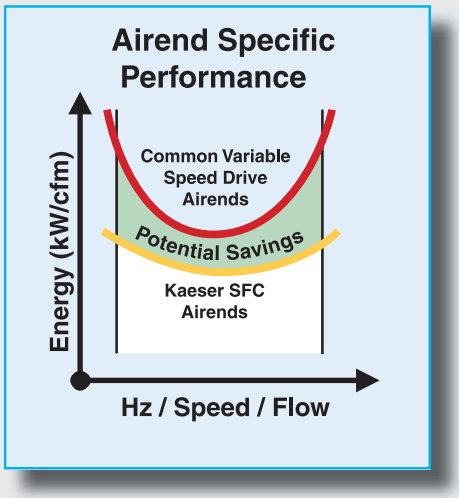
Kaeser's SFC design includes highly accurate sensors to maintain stable pressure (±2 psig), without air wasting air by over pressurizing the system. This also increases reliability and product quality in your plant.



Graph 1

Sigma Profile™ Airend

Kaeser's single-stage, flooded rotary screw airend with the power-saving Sigma Profile is optimized for variable speed operation over a wide range of flows. Kaeser makes a variety of airends so each machine is matched with the best one for optimized efficiency. See graph 2.



Graph 2

One-to-One Direct Drive

Some compressors claim to have direct drive but actually use gear drives. Our drive connects the motor directly to the airend with a maintenance-free coupling, providing maximum transmission efficiency. The airend and motor are connected by a casting which is doweled and pinned to assure perfect alignment. This one-to-one drive reduces the number of components. In addition, it has none of the efficiency losses or maintenance requirements associated with gear drives.

SFC Series

Motor

Totally Enclosed Fan Cooled (TEFC), premium-efficiency, 460 or 575 V, 3-phase, 60 Hz, and class F insulation. Other voltages are available. Easily accessible grease fittings (SFC 37-515) make maintenance a breeze.

Important SFC Drive Features

- Operate across a very wide range of flow (20 -100%) without cooling problems that some others have.
- Dedicated drive cabinet cooling fans for better ventilation and reliability, even in extreme conditions.
- Electromagnetic interference (EMI) filters that eliminate or isolate all feedback and prevent harmonic distortion from entering the plant's electrical grid.
- Line reactors are standard equipment to reduce the harmonic distortions that naturally occur in frequency drives.
- Galvanic isolation between the power source and the drive ensures safety. When the unit is switched off or the emergency stop is pushed, all power is cut to the drive, however, control logic is still maintained.
- 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

Intelligent Control and Protection

To protect your investment and ensure the most efficient operation possible, we control the compressor with our Sigma Control 2™. The Sigma Control 2 works with the SFC drive system to efficiently adjust compressed air output to fluctuating demand. System pressure is maintained ±2 psig without sacrificing efficiency. 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 maintenance.

Sigma Control 2 has superior communications capabilities. An Ethernet port and built-in web server enable remote access. ModBus, Profibus, Devicenet, and other industrial communications interfaces are also available as plug in options for seamless integration into plant control/monitoring systems. See our Sigma Control 2 brochure for details.

Split Cooling Design

Three separate air inlet zones for the coolers, compressor, and drive motor ensure optimum performance. Drawing ambient air directly across the coolers and motor through separate zones avoids preheating and results in lower approach temperatures, longer lubricant life, and cooler motor temperatures. The oil and after-coolers are conveniently located on the outside for superior cooling and ease of service. For increased energy savings, exhaust air is easily captured for heat recovery at the top of the cabinet.

Cooling Fan

A powerful radial fan draws cool ambient air through the coolers. Its high static pressure makes it ideally suited for ducting and heat recovery applications. The radial fan is extremely quiet and consumes less power than conventional axial fans providing additional energy savings.

Inlet Filter

We protect our compressors with a two-stage, 1 micron air intake filter. This extends airend life and fluid change intervals. The filter may be cleaned several times before replacement and is easily serviced with no tools required.

Fluid Separation System

Our separator tank has a 3-stage separation system that ensures very low pressure drop, fluid carry-over (1-3 ppm), and extended filter service life.

Our no-leak design features rigid steel piping, flexible connections, and vibration isolators. Each pressure vessel is ASME coded (CRN in Canada) and includes wet side/dry side fittings to check differential pressure, an easy to read fluid level indicator, and our unique quick drain system.

Solid Construction

Kaeser compressors are constructed with solid steel base frames and floors. The airend/drive motor module and separator tank are each mounted on large vibration isolation mounts to eliminate all strain on piping and wiring. All of our compressors have full, sheet metal enclosures with durable powder coat finishes and dense polymer foam insulation to provide safety and to protect components from dirty environments. Unit also features hinged and gasketed access doors as well as removable rear and side cabinet panels for easy service access.

Extremely Quiet

Kaeser integrates several design features to make our compressors extremely quiet. The low-noise radial fan, insulated cabinet, and split cooling air-flow design considerably reduce noise generated. With noise levels as low as 68 dB(A), the SFC is nearly 10 dB(A) quieter than comparable compressors.

Technical Specifications for Air-Cooled Units

Model	Pressure Range [1] (psig)	*Capacity for 460V [2] (cfm)		Rated Motor Power (hp)	Dimensions L x W x H (in.)	Weight [3] (lb.)	Sound Level [4] (dB(A))
		Min	Max				
SFC 18	110	24	130	25	72 7/8 x 36 1/4 x 59 1/4	1580	68
SFC 18T	125	23	124			1820	
SFC 22	110	29	157	30		1740	69
SFC 22T	125	29	150			1980	
SFC 30S	110	38	205	40		1760	69
SFC 30ST	125	37	195			2010	
SFC 37	110	54	254	50	65 1/2 x 40 1/2 x 66 7/8 81 1/4 x 40 1/2 x 66 7/8	2359	74
SFC 37T	125	54	240			2645	
SFC 45S	110	69	288	60		2359	74
SFC 45ST	125	69	273			2645	
SFC 45	110	69	310	60	69 1/4 x 43 3/4 x 74 3/4 85 x 43 3/4 x 74 3/4	2778	73
SFC 45T	125	69	295			3131	
SFC 55	110	77	374	75		3042	74
SFC 55T	125	76	357			3395	
SFC 75S	110	100	463	100		3086	75
SFC 75ST	125	100	441			3505	
SFC 90S	110	120	509	100	83 x 50 3/4 x 76 3/4 98 3/4 x 50 3/4 x 76 3/4	4045	73
SFC 90ST	125	118	484			4519	
SFC 110S	110	136	618	125		4464	74
SFC 110ST	125	134	588			4938	
SFC 75	110	127	559	100	117 5/8 x 68 x 80 1/4 130 1/8 x 68 x 80 1/4	6834	71
SFC 75T	125	126	528			7500	
SFC 90 **SFC 90T**	110	127	627	125		7121 7780	72
	125	126	595				
	145	125	547				
SFC 110 **SFC 110T**	110	150	735	150		8223 8990	74
	125	147	692				
	145	141	629				
SFC 132S **SFC 132ST**	110	209	830	175		8532 9040	75
	125	208	781				
	145	279	706				
SFC 132	110	209	919	200	124 1/4 x 76 5/8 x 80 1/4	9149	74
	125	208	867				
	145	279	788				
SFC 160	110	230	1074	250		10,141	79
	125	226	1017				
	145	198	929				
SFC 200	110	303	1305	270	122 x 78 3/4 x 84 1/4	12,798	76
	125	300	1240				
	145	227	1091				
SFC 250	110	358	1466	340		12,842	77
	125	357	1384				
	145	294	1271				
SFC 315	110	470	2091	450	142 1/4 x 89 5/8 x 92 7/8	15,430	83
	125	466	1988				
	145	346	1769				
SFC 410 [5]	110	413	2624	590	172 x 84 1/2 x 92 3/8	21,164	75
	125	410	2525				
	145	346	2264				
SFC 515 [5]	110	417	3037	700		22,267	76
	125	353	2633				
	145	346	2523				

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. (5) These units are only available water-cooled.

Specifications are subject to change without notice.

Options

Integrated Refrigerated Dryer (T models)

SFC models 18 through 132S are available with a fully integrated refrigerated dryer sized to produce a consistent dew point at full flow. The dryer compartment is completely isolated from the air compressor. Forced air cooling with low flow resistance and a dedicated fan ensure reliable performance and the top side exhaust design supports efficient heat recovery. The internal heat exchangers are stainless steel for long life. All cold surfaces are insulated and only CFC-free R134a refrigerant is used. Power is wired from the main control cabinet and service points are easily accessible.

T models include high efficiency moisture separators with stainless steel cores for long life and no maintenance. They are equipped with the Eco-Drain to automatically remove condensate without wasting valuable compressed air. Eco-Drains aluminum housing and patented valve technology ensure many years of reliable service.

Heat Recovery

Compressing air converts much of the electrical energy you buy into heat. Whether air or water-cooled, Kaeser compressors can be easily adapted for heat recovery to achieve even greater energy savings.

Air-cooled compressors with a combination of exhaust air and fluid circuit heat recovery.

Online Utility Rebate Finder

Many utilities offer financial incentives to improve compressed air system energy efficiency. Visit www.kaeser.com/rebates to see a comprehensive database of utility incentives for compressed air and other industrial equipment.

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