

# SCREW COMPRESSORS







# QUALITY AND INNOVATIONS MADE IN GERMANY.

## Decades of experience and excellent performance

ALMiG is one of the leading compressed air technology system providers and has decades of experience delivering premium products in the compressed air sector. Companies all around the world trust in our customer focused solutions, our quality, innovation and flexibility. Our advanced compressor technologies combine excellence with the quietest possible running performance, optimal energy efficiency and particularly careful conservation of resources.

## Ongoing development and comprehensive industry knowledge

Constant research and development form the essential foundation for the efficiency of every system manufactured by ALMiG. Only these constant enhancements and improvements enable us to react quickly and flexibly to individual customer wishes. This attitude is complemented by a comprehensive understanding of the sector: we understand the challenges that our customers are faced with and the requirements that arise as a consequence. ALMiG offers effective solutions for a wide range of applications – from small craft workshops to medium-sized companies to big industry.

## Complete service and maximum availability

The highest quality technological solutions deserve an equally high level of service. The ALMiG service provisions offer our customers a complete service programme: from providing comprehensive advice to ensuring availability, improving cost-effectiveness and developing energy-saving potential. As an expert partner, ALMiG offers its customers advice and support on all issues. Our goal is to contribute to your economic success with our service offerings.

### **ALMiG: Compressor Systems Made in Germany**

Piston compressors

Screw compressors

Turbo compressors

Scroll compressors

Special installations

Controllers

Compressed air treatment

Services

# SCREW COMPRESSORS

From 3 kW to 500 kW

- + Maximum reliability in continuous operation
- + Minimise your operating costs with energy-efficient compressors
- + ALMiG probably has the most comprehensive range of screw compressors on the market
- + The right drive concept for any application

Compact and cost-effective

**COMBI series**  
5,5 – 22 kW

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High performance with direct drive

**DIRECT series**  
37 – 315 kW

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Compressor output with endurance

**G-DRIVE and V-DRIVE**  
30 – 75 kW

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Best efficiency in class

**G-DRIVE T**  
90 – 250 kW

S. 10

Powerful and versatile

**BELT series**  
4 – 37 kW

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### Compact, quiet and powerful

**FLEX series**  
5,5 – 30 kW

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### Oil-free compressed air of outstanding quality

**LENTO series**  
15 – 130 kW

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### High delivery volume that packs a punch

**GEAR series**  
30 – 500 kW

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### Energy savings with SCD technology

**VARIABLE series**  
16 – 355 kW

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# G- /V-DRIVE

## Compressor output with high endurance

The G-DRIVE and V-DRIVE series offer consistently high performance as well as numerous features for particularly reliable, energy-efficient operation and convenient maintenance. There are various useful extensions available for the latest generation of ALMiG screw compressors: an efficient heat recovery system with a constant temperature, an integrated refrigeration dryer which is precisely designed for the delivery volume of the system, as well as the latest controllers to network your entire compressed air station. The system extensions do not affect the footprint of the compressor at all.

### Optional integrated refrigeration dryer

In this version, the refrigeration dryer is integrated in the system to save space. The compressor is used to supply the dryer with power, control it and protect it against freezing if operated at "underload". The parameters of the refrigeration dryer are exactly tailored to the respective kW class and the dryer cannot be "bypassed".

### Energy-saving speed control

All variants are also optionally available with energy-saving speed control.

This is where the highly efficient direct drive comes into play: the high-frequency drive motor operates with outstanding efficiency over the entire speed range.

The operating pressure can be adjusted steplessly from 5 to 13 bar. The high-quality frequency inverter is easy to access in the control cubicle – an optimised cooling air guide provides optimum ventilation. Inverters and cables are electro-magnetically shielded.

### Heat recovery system

All our systems are designed so that an integrated heat recovery system can be fitted into them – either directly at the factory or as a subsequent retrofit. With this system, the energy consumed for the generation of compressed air can be converted almost entirely to usable heat; for example, as hot water for feeding into heating systems or for heating process water or industrial water. The constant temperature of the heat recovery system ensures reliability.

### Reduced service costs

The G-DRIVE and V-DRIVE screw compressors are very easy to maintain: all components are easily accessible from one side and the large sound-insulating doors are easy to remove. This reduces the maintenance and downtimes to a minimum, and ensures that the service costs are completely manageable.

#### Application

Industry

#### Power output

30 kW - 75 kW

Volume flow acc. to ISO 1217  
(Annex C-1996)

G-Drive: 3.92 – 13,54 m<sup>3</sup>/min

V-Drive: 1.77 – 13.00 m<sup>3</sup>/min

#### Operating pressure

5 – 13 bar; stepless settable

#### Cooling

Air-cooled (standard)

Water-cooled (option)

#### Drive

V-Drive: Direct and speed-controlled

G-Drive: Gearbox

#### Motor

Energy efficiency class IE 3; IP 55  
protection, protection class F



- + The latest controllers are used to network the entire compressed air station
- + Modular system concept developed for maximum energy efficiency
- + An efficient heat recovery system with a constant temperature
- + An integrated refrigeration dryer which is precisely designed for the delivery volume of the system



Suitable controllers:

### AIR CONTROL B



Standard

### AIR CONTROL P



Optional

### AIR CONTROL HE



Optional

Controllers starting on p. 42

# G-DRIVE/V-DRIVE



G-DRIVE 30/37

## 50 Hz

G-DRIVE	Volume flow acc. to ISO 1217 (Annex C-1996)			Rated motor power	Length	Width	Height	Weight
	8 bar	10 bar	13 bar					
Model	m <sup>3</sup> /min	m <sup>3</sup> /min	m <sup>3</sup> /min	kW	mm	mm	mm	kg
30	5.46	4.86	3.92	30	1681	959	1635	860
37	6.54	5.72	5.04	37	1681	959	1635	885
38	6.76	5.89	4.94	37	1900	1100	1725	1100
45	7.90	6.98	5.91	45	1900	1100	1725	1250
56	9.79	8.95	7.75	55	2300	1380	1950	2120
75	13.54	11.95	10.51	75	2300	1380	1950	2241





V-DRIVE 30/37

50 Hz								
V-DRIVE	Volume flow acc. to ISO 1217 (Annex C-1996)			Rated motor power	Length	Width	Height	Weight
	8 bar	10 bar	13 bar					
Model	m <sup>3</sup> /min	m <sup>3</sup> /min	m <sup>3</sup> /min	kW	mm	mm	mm	kg
30	1.84 - 5.16	1.81 - 4.62	1.77 - 3.88	30	1702	959	1635	720
37	1.84 - 6.21	1.81 - 5.58	1.77 - 4.74	37	1702	959	1635	740
38	2.42 - 6.76	2.37 - 5.89	2.30 - 4.94	37	1900	1100	1725	1050
45	2.43 - 7.90	2.39 - 6.98	2.32 - 5.91	45	1900	1100	1725	1200
56	3.99 - 10.02	3.91 - 8.95	3.80 - 7.75	55	2300	1380	1950	1941
75	3.96 - 13.00	3.89 - 11.58	3.77 - 9.62	75	2300	1380	1950	2041

# G-DRIVE T

## Highest efficiency in class

With the two stage G-Drive T series ALMiG sets new standards in energy efficiency. By compressing air in two stages they achieve a specific performance which is at the highest level. Therefore, the G-Drive T compressor series offers a higher volume flow with a lower input power consumption, in comparison to an equivalent single stage compressor. Low rotational speeds and lower internal compression ratios within the compressor stages increase the efficiency, reliability and lifetime of the compressor elements. State of the art efficiency, coupled with a low sound level and low service costs, makes the 2-stage technology very interesting for industrial compressed air users.

The G-Drive T offers all these benefits, plus a compact footprint due to its well-thought-out design. With a look to Industry 4.0, the controller of the compressor has all the required functionalities to communicate with common industrial company systems. Or simply use the cloud service to monitor the compressor from anywhere.

### Advantages:

- Due to the high efficiency of the compressor maximum energy savings can be achieved and the life cycle costs of the machine can be reduced
- Up to 15% greater energy savings in comparison to a single stage compressor
- Durable and reliable
- Low differential pressures
- Reduced heat load
- Easy maintenance and service

The unique design of the airend integrates the first and second stage into one compressor element. The rotors of both air ends achieve the optimal speed due to the gear drive.

An efficient compression is achieved by using a cooling oil mist for interstage cooling. This controlled amount of oil enables at the same time to avoid condensate in the second stage. A complicated and expensive separate interstage cooling is not necessary and reliability increases.

### Application

Industry

### Power output

90 – 250 kW

Volume flow acc. to ISO 1217  
(Annex C-1996)

14,6 – 51,5 m<sup>3</sup>/min

### Operating pressure

5 – 13 bar

### Cooling

Air-cooled

### Drive

Gear

### Motor

Energy efficiency class IE 3; IP 55  
protection, protection class F



- + Efficient screw compressor technology
- + Low rotational speeds together with lower internal pressure ratios ensure a long durability
- + Efficiency and ease of maintenance made for lower life cycle costs

**Heavy duty suction filter**

Best possible filtration and easy maintenance

**Oil lubricated two stage compression**

Best possible efficiency, integrated gear drive and robust durable design

**Industry 4.0**

Smart controller that monitors, visualises and documents



**Energy-efficient IE3 Motor**

with long bearing life

**Stable base frame**

Sealed against leaks, with vibration dampeners

**AIR CONTROL HE**



Standard

Controllers starting on p.42

# G-DRIVE T



G-DRIVE T

50 Hz								
G-DRIVE T	Volume flow acc. to ISO 1217 (Annex C-1996)			Rated motor power	Length	Width	Height	Weight
	8 bar	10 bar	13 bar					
Modell	m <sup>3</sup> /min	m <sup>3</sup> /min	m <sup>3</sup> /min	kW	mm	mm	mm	kg
90	18,2	16,3	14,6	90	2900	1860	1945	4000
110	22,0	19,2	17,8	110	2900	1860	1945	4100
132	26,1	23,2	21,5	132	2900	1860	1945	4200
160	32,3	28,6	26,5	160	3520	2290	2030	5500

50 Hz								
G-DRIVE T	Volume flow <small>acc. to ISO 1217 (Annex C-1996)</small>			Rated motor power	Length	Width	Height	Weight
	8 bar	10 bar	13 bar					
Modell	m <sup>3</sup> /min	m <sup>3</sup> /min	m <sup>3</sup> /min	kW	mm	mm	mm	kg
200	40,5	35,0	31,0	200	3350	2350	2400	7000
220	44,5	38,7	34,2	220	3350	2350	2400	7000
250	51,5	45,3	40,0	250	3350	2350	2400	7000

# COMBI

## The cost-effective 4-in-1 compact system

Our COMBI screw compressors are a highly cost-effective 4-in-1 solution: The compressed air station combines

- a compressor,
- compressed air receiver (with manual shut-off, and also with an automatic condensate drain as an option),
- refrigeration dryer and
- pre- and after-filters

in one housing as standard. The series thus fulfils the high quality requirements for compressed air for pneumatic applications specified by DIN ISO 8573-1.

Requiring the smallest possible space and emitting very low noise levels, the machines of the COMBI series can be installed exactly where the compressed air is needed, saving your company major investments in expensive pressure lines. The belt-driven systems of the COMBI series are used in applications ranging from practical trades to heavy-duty industry.

In small-scale workshops, the compressors guarantee a reliable supply of compressed air while, in industry, the COMBI products serve as an individual decentralized compressed air solution.

Other benefits of these compact systems include their low weight and therefore the ease of transport. All it takes is a lifting truck or a fork-lift truck to install the ready-to-connect and ready-to-use compressed air station on site.

### The product range

2 different system sizes:

- COMBI 6–15: 270 l standard / 500 l optional
- COMBI 16–22: 500 l standard

All the compressors in the series are available:

- with/without receiver
- with/without refrigeration dryer
- with/without compressed air filter
- with various controllers to suit your needs

### Application

Trade, small-scale industry

### Power output

COMBI II: 5.5 – 15 kW  
COMBI III: 15 – 22 kW

Volume flow acc. to ISO 1217  
(Annex C-1996):

8 bar: 0.82 – 3.24 m<sup>3</sup>/min  
10 bar: 0.72 – 2.75 m<sup>3</sup>/min  
13 bar: 0.62 – 2.54 m<sup>3</sup>/min

### Operating pressure

5 – 13 bar

### Cooling

Air-cooled (standard)

### Drive

V-belt

### Motor

Energy efficiency class IE 3;  
IP 55 protection,  
protection class F



- + 4-in-1: compressor, compressed air receiver, refrigeration dryer, pre-/after-filter
- + Fulfils quality requirements for compressed air according to DIN ISO 8573-1
- + Small space requirements
- + Low noise level
- + Easy to transport due to low weight

**Maintenance-friendly design**

**Compressor stage**  
with low speeds

**Air Control**

Smart controller that monitors, visualises and documents



**Drive motor**  
Energy efficiency class IE 3

**Receiver**

**Treatment**

Suitable controllers:

**AIR CONTROL MINI**



Standard (6 – 22 kW)

**AIR CONTROL B**



Optional (6 – 22 kW)

**AIR CONTROL P**



Optional (6 – 22 kW)

**AIR CONTROL HE**



Optional (6 – 22 kW)

Controllers starting on p. 42

# COMBI



COMBI 6 – 15

50 Hz								
COMBI	Volume flow acc. to ISO 1217 (Annex C-1996)			Rated motor power	Length	Width	Height	Weight
	8 bar	10 bar	13 bar					
Model	m <sup>3</sup> /min	m <sup>3</sup> /min	m <sup>3</sup> /min	kW	mm	mm	mm	kg
6	0.82	0.72	0.62	5.5	1180	770	1128	305
8	1.09	1.02	0.85	7.5	1180	770	1128	310
11	1.61	1.43	1.22	11	1180	770	1128	315
15	1.96	1.86	1.61	15	1180	770	1128	325
16	2.35	2.02	1.88	15	1480	780	1375	454
18	2.75	2.44	2.25	18.5	1480	780	1375	473
22	3.24	2.75	2.54	22	1480	780	1375	519

60 Hz									
Model	100 psig	125 psig	150 psig	190 psig	HP	inch	inch	inch	lbs
	acfm	acfm	acfm	acfm					
6 / 8	30	28	25	21	7.5	44.1	27.0	44.4	628
8 / 10	37	37	35	29	10	44.1	27.0	44.4	639
11 / 15	59	55	48	42	15	44.1	27.0	44.4	650
15 / 20	72	68	63	56	20	44.1	27.0	44.4	672
16 / 21	86	81	72	64	20	58.3	70.1	54.1	1001
18 / 25	104	98	90	83	25	58.3	70.1	54.1	1043
22 / 30	124	113	102	97	30	58.3	70.1	54.1	1144





COMBI 16 – 22

Compressor + dryer				
COMBI	Dimensions		Weight	
Model	mm	inch	kg	lbs
8	1180 x 770 x 1128	44.1 x 27.0 x 44.4	345	717
11	1180 x 770 x 1128	44.1 x 27.0 x 44.4	350	728
15	1180 x 770 x 1128	44.1 x 27.0 x 44.4	360	750
16	1480 x 780 x 1375	58.3 x 70.1 x 54.1	494	1098
18	1480 x 780 x 1375	58.3 x 70.1 x 54.1	513	1131
22	1480 x 780 x 1375	58.3 x 70.1 x 54.1	559	1232

Compressor + receiver (270 litres / 71 gal)							
Model	mm	inch	without dryer		with dryer		
			kg	lbs	kg	lbs	
6	1180 x 770 x 1680	44.1 x 27.0 x 66.1	420	882	455	959	
8	1180 x 770 x 1680	44.1 x 27.0 x 66.1	425	893	460	970	
11	1180 x 770 x 1680	44.1 x 27.0 x 66.1	430	904	465	981	
15	1180 x 770 x 1680	44.1 x 27.0 x 66.1	440	926	475	1003	

Compressor + receiver (500 litres / 132 gal)							
Model	mm	inch	without dryer		with dryer		
			kg	lbs	kg	lbs	
6	1900 x 770 x 1680	74.8 x 27.0 x 66.1	485	1025	520	1102	
8	1900 x 770 x 1680	74.8 x 27.0 x 66.1	490	1036	525	1113	
11	1900 x 770 x 1680	74.8 x 27.0 x 66.1	495	1047	530	1124	
15	1900 x 770 x 1680	74.8 x 27.0 x 66.1	505	1069	540	1146	
16	1900 x 780 x 1950	74.8 x 30.7 x 76.8	639	1409	679	1497	
18	1900 x 780 x 1950	74.8 x 30.7 x 76.8	658	1451	698	1539	
22	1900 x 780 x 1950	74.8 x 30.7 x 76.8	704	1552	744	1640	

# BELT

## Powerful for versatile applications

The unique design concept of the BELT series makes it cost-effective in every kW class and therefore highly suitable for versatile applications.

With its robust and proven components, the series ensures a high compressor output and reliability around the clock. The tenacious compressors are fitted with a low-maintenance V-belt drive, which transfers the 4 to 200 kW of power with virtually no losses.

The BELT series enables very cost-effective and reliable usage in a volume flow range of up to 5.78 m<sup>3</sup>/min. The fixed speed concept of the series also delivers long service lives and low maintenance costs, making the screw compressors especially well suited for use as base load compressors in continuous operation.

### The product range

3 variants with various outputs and volume flows:

- BELT 4–37
- BELT 4–37 "PLUS"\*
- BELT 4–37 "O"\*\*

\* "PLUS" variant with attached compressed air refrigeration dryer, can also be retrofitted.

\*\* "O" variant with attached compressed air refrigeration dryer and filter system comprising 1x depth filter and 2x active carbon filter for generating technically oil-free compressed air.

### Application

Industry

### Power output

BELT I: 4 – 37 kW

Volume flow acc. to ISO 1217  
(Annex C-1996):

8 bar: 0.65–5.78 m<sup>3</sup>/min

10 bar: 0.54–5.15 m<sup>3</sup>/min

13 bar: 0.43–4.42 m<sup>3</sup>/min

### Operating pressure

5 – 13 bar

### Cooling

Air-cooled (standard)

Water-cooled (option as of 11 kW)

### Drive

V-belt

### Motor

Energy efficiency class IE 3; IP 55  
protection, protection class F



- + Versatile use thanks to numerous possible extension options
- + Proven V-belt drive
- + Low maintenance costs due to long service lives



**Maintenance-friendly design**

**Air Control**

Smart controller that monitors, visualises and documents

**Efficient cooling air guide**

**Coolant filter**

**Horizontal separating tank**

With external fine separator cartridges

**Base frame**

Torsion-resistant, liquid-tight design

Suitable controllers:

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**AIR CONTROL B**



Standard

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**AIR CONTROL P**



Optional

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**AIR CONTROL HE**



Optional

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Controllers starting on p. 42

# BELT



BELT 4-37

50 Hz								
BELT	Volume flow acc. to ISO 1217 (Annex C-1996)			Rated motor power	Length	Width	Height	Weight
	8 bar	10 bar	13 bar					
Model	m <sup>3</sup> /min	m <sup>3</sup> /min	m <sup>3</sup> /min	kW	mm	mm	mm	kg
4	0.65	0.54	0.43	4	1020	700	930	200
5	0.88	0.78	0.65	5.5	1020	700	930	200
7	1.20	1.07	0.87	7.5	1020	700	930	230
11	1.70	1.50	1.32	11	1270	890	1190	250
15	2.24	1.98	1.63	15	1270	890	1190	250
16	2.52	2.17	1.75	15	1270	890	1190	400
18	2.97	2.62	2.27	18.5	1270	890	1190	410
22	3.54	3.12	2.67	22	1270	890	1190	470
30	4.60	4.12	3.40	30	1270	890	1190	560
37	5.78	5.15	4.42	37	1270	890	1190	590



BELT 4–37 "PLUS"

60 Hz									
BELT	Volume flow acc. to ISO 1217 (Annex C-1996)				Rated motor power	Length	Width	Height	Weight
	100 psig	125 psig	150 psig	190 psig					
Model	acfm	acfm	acfm	acfm	HP	inch	inch	inch	lbs
4 / 5	25	23	20	-	5.5	40.2	27.6	36.6	419
5 / 7	32	30	26	24	7.5	40.2	27.6	36.6	419
7 / 10	43	41	37	30	10	40.2	27.6	36.6	452
11 / 15	64	60	53	46	15	40.2	27.6	36.6	485
15 / 20	87	78	72	62	20	40.2	27.6	36.6	518
16 / 21	97	91	83	62	20	50	35	46.9	959
18 / 25	113	101	94	78	25	50	35	46.9	992
22 / 30	127	120	112	98	30	50	35	46.9	1069
30 / 40	174	156	148	122	40	50	35	46.9	1279
37 / 50	203	182	176	160	50	50	35	46.9	1312

# DIRECT

## High performance with direct drive

ALMiG's DIRECT series is setting standards in the world of compressed air systems with direct drives: the motor's output is transferred directly to the compressor stage, i.e. without the loss experienced with a V-belt or gear drive.

This type of drive is around 99.9% efficient and is therefore much more efficient than standard drives.

The unique design concept of the DIRECT series makes it incredibly cost-effective in every kW class and therefore highly versatile. It ensures that your company benefits from compressed air generation at minimum operating costs around the clock.

When these compressors with direct drive are combined with the VARIABLE and V-Drive series, they form an unbeatable energy-saving duo.

### Advantages when combined with VARIABLE:

- Same system design
- Same components
- Same supply of spare parts
- Same handling
- Outstanding cost-effectiveness

### Application

Industry

### Power output

DIRECT II: 37 – 55 kW

DIRECT III: 75 – 160 kW

DIRECT IV: 280 – 315 kW

Volume flow acc. to ISO 1217  
(Annex C-1996):

6.80 – 48 m<sup>3</sup>/min

### Operating pressure

5 – 13 bar

### Cooling

Air (standard)

Water (option as of 37 kW)

DIRECT 315 only water-cooled

### Drive

Direct

### Motor

Energy efficiency class IE 3; IP 55  
protection, protection class F



- + Loss-free transmission of the drive power to the compressor stage – nearly 100% efficient
- + Highly versatile due to unique design concept
- + High performance and reliability at minimum operating costs
- + Unbeatable energy efficiency in combination with VARIABLE and V-Drive

**Separation system**

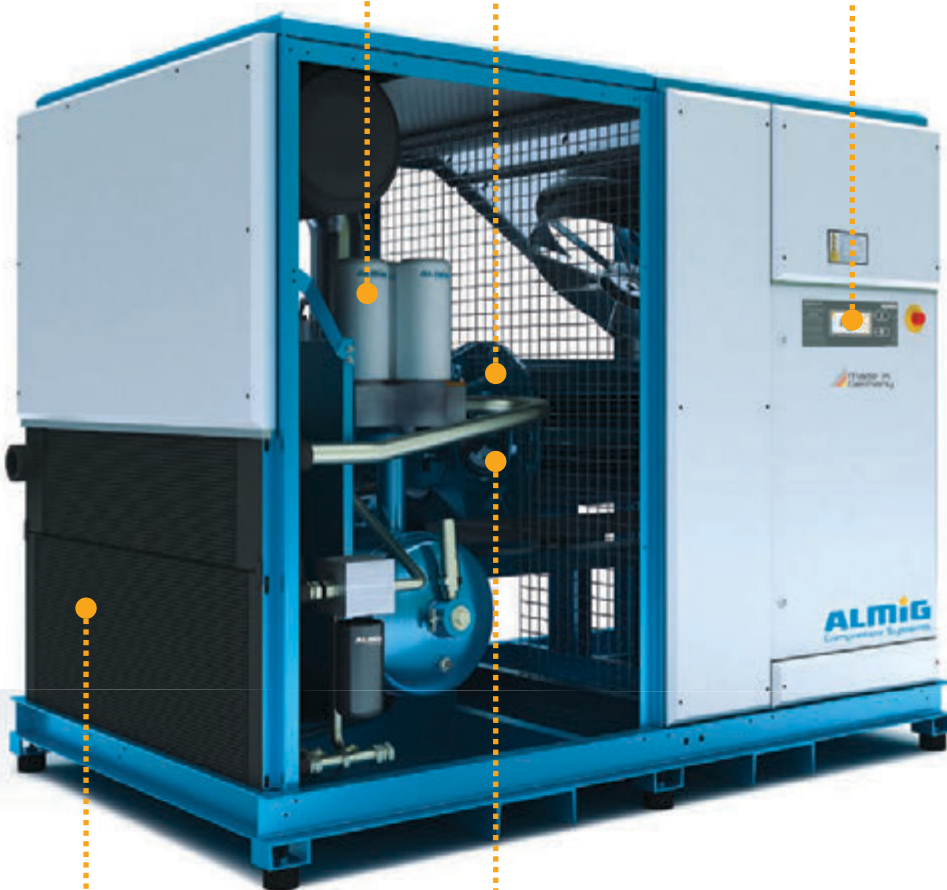
Outstanding compressed air quality from proven multi-stage separation

**Drive system**

Highly efficient, loss-free direct drive

**Air Control**

Smart controller that monitors, visualises and documents



**Cooling unit**

Large cooler for minimum compressed air outlet temperatures and optimum coolant temperatures

**Compressor**

High-performance, excellent efficiency

Suitable controllers:

**AIR CONTROL P**



Standard

**AIR CONTROL HE**



Optional

Controllers starting on p. 42

# DIRECT



DIRECT 37–55

50 Hz							
DIRECT	Operating overpressure	Volume flow acc. to ISO 1217 (Annex C-1996)	Rated motor power	Length	Width	Height	Weight
Model	bar	m <sup>3</sup> /min	kW	mm	mm	mm	kg
37	7.5	6.80	37	1750	1080	1600	1000
45	10	6.72	45	1750	1080	1600	1100
75	11	11.58	75	2300	1400	1860	1970
90	13	11.47	90	2300	1400	1860	2200
132	8	23.90	132	2700	1686	1888	3500
160	11.5	23.37	160	2700	1686	1888	3900
280	8	48.30	315	3400	1650	2025	4300
315	10	48	315	3400	1650	2025	4400





DIRECT 280 – 315

60 Hz							
DIRECT	Operating overpressure	Volume flow acc. to ISO 1217 (Annex C-1996)	Rated motor power	Length	Width	Height	Weight
Model	psig	acfm	HP	in	in	in	lbs
18/25	100	126	25	60.8	35	46.9	1091
22/30	145	125	30	60.8	35	46.9	1157
45/60	110	288	60	68.9	42.5	63	2359
55/75	145	285	75	68.9	42.5	63	2557
75/100	110	499	100	90.6	55.1	73.2	4299
90/125	145	493	125	90.6	55.1	73.2	4519
160/215	125	1009	215	90.6	55.1	79.7	7606
315/425	110	2049	425	134	65	79.7	9700

# GEAR

## High delivery volume that packs a punch

The screw compressors of the GEAR series are particularly suitable for very high compressed air requirements. The product range offers delivery volumes of 3.58 to 71.15 m<sup>3</sup>/min at max. operating pressures of 8, 10 and 13 bar.

The maintenance- and service-friendly drive concept of the GEAR compressors includes a robust drive motor with high power reserves.

The highly efficient gearbox delivers minimum slip, high reliability, is virtually free of losses with an efficiency of >98% and is gentle on the drive. What's more, highly efficient separation of the cooling medium enables a minimum residual oil content of just 2 – 3 mg/m<sup>3</sup>.

Due to the enclosed design of the gear set, these systems are suitable for use under the toughest operating conditions.

### Application

### Industry

### Power output

GEAR I:	30 – 75 kW
GEAR II:	90 – 200 kW
GEAR II:	200 – 500 kW

### Volume flow acc. to ISO 1217 (Annex C-1996):

8 bar:	5.01 – 71.15 m <sup>3</sup> /min
10 bar:	4.32 – 64 m <sup>3</sup> /min
13 bar:	3.58 – 33.31 m <sup>3</sup> /min

### Operating pressure

5 – 13 bar

### Cooling

Air (standard);  
water (option);  
GEAR 315 – 500 only water-cooled

### Drive

Gearbox

### Motor

Energy efficiency class IE 3; IP 55  
protection, protection class F



- + Ideal for very high compressed air requirements
- + Robust drive unit with high power reserves
- + Virtually free of losses with an efficiency of >98%
- + Maintenance- and service-friendly drive concept

**Drive system**

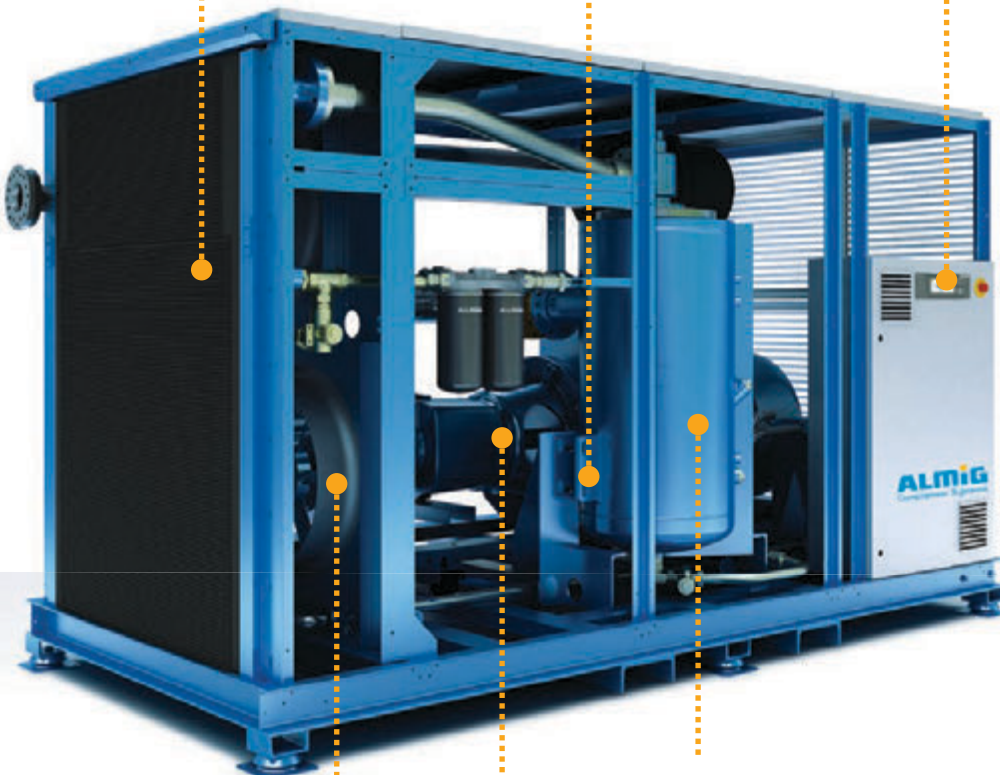
Driven by perfectly matched gearbox

**Cooling unit**

Large cooler for minimum compressed air outlet temperatures

**Air Control**

Smart controller that monitors, visualises and documents



**Fan**

Optimum cooling, high residual thrust

**Separation system**

Outstanding compressed air quality from proven multi-stage separation

**Compressor stage**

State-of-the-art stage technology, with integrated gear set

Suitable controllers:

**AIR CONTROL B**



Standard (30 – 75 kW)

**AIR CONTROL P**



Optional (30 – 75 kW)  
Standard (90 – 450 kW)

**AIR CONTROL HE**



Optional

Controllers starting on p. 42

# GEAR



GEAR 30–75



GEAR 90–200

50 Hz								
GEAR	Volume flow acc. to ISO 1217 (Annex C-1996)			Rated motor power	Length	Width	Height	Weight
	8 bar	10 bar	13 bar					
Model	m <sup>3</sup> /min	m <sup>3</sup> /min	m <sup>3</sup> /min	kW	mm	mm	mm	kg
30	5.01	4.32	3.58	30	1850	1080	1600	920
37	5.81	5.19	4.25	37	1850	1080	1600	980
45	6.96	6.38	5.35	45	1850	1080	1600	1100
55	9.37	8.16	6.67	55	1950	1080	1600	1250
75	11.69	10.35	8.94	75	1950	1080	1600	1270
90	15.30	13.25	10.34	90	2600	1400	1860	2700
110	19.10	16.46	13.10	110	2600	1400	1860	2950
132	22.99	19.94	16.58	132	2800	1400	2025	3830
160	27.38	24.49	19.89	160	2800	1400	2025	3900
200	29.65	29.46	24	200	2800	1400	2025	4150



GEAR 201 – 500

50 Hz								
GEAR	Volume flow acc. to ISO 1217 (Annex C-1996)			Rated motor power	Length	Width	Height	Weight
	8 bar	10 bar	13 bar					
Model	m <sup>3</sup> /min	m <sup>3</sup> /min	m <sup>3</sup> /min	kW	mm	mm	mm	kg
201	36.41	32.44	25.60	200	3400	1650	2025	4200
250	44.15	39.24	33.31	250	3400	1650	2025	4300
315	53.21	45.71	on request	315	3400	1650	2025	5700
355	61.66	52.74	on request	355	3600	2100	2200	5750
400	65.94	58.41	on request	400	3600	2100	2200	5900
450	-	64.10	on request	450	3600	2100	2200	6200
500	71.15	64	on request	500	3600	2100	2200	6800

# FLEX

## Compact, quiet and powerful

The speed-controlled, directly driven compressors of the FLEX series are used wherever compressed air is to be generated by a small, compact and extremely quiet system.

With the vertical alignment of the motor-compressor unit in the FLEX series, ALMiG has developed one of the most compact screw compressor systems on the market. The sound level of these small screw compressors is only around 60 dB(A). If required, they can be used directly at the workstation.

The FLEX series also provides you with a significant cost reduction: market analyses show that on average compressors only have a utilisation rate of around 50 – 70%. The maximum delivery volume is, however, only needed during peak times. The integrated ALMiG SCD technology, the benefits of which come to the fore in partial load applications, allows you to achieve an energy saving of up to 35%. The holistic SCD technology drive concept stands for **S**peed **C**ontrolled and **D**irect drive.

The speed-controlled version of the direct drive offers additional benefits. For example, a speed-controlled FLEX can instantly make an entire compressed air station more cost-effective in the smart ALMiG "master-slave network".

### Achieve an energy saving of up to 35% through:

- Speed control
- Constant mains pressure, stepless from 5 to 13 bar
- Extremely good system efficiency
- No start-up changeover power peaks
- No expensive idle times

#### Application

Industry

#### Power output

FLEX II: 5.5 – 15 kW

FLEX III: 15 – 30 kW

Volume flow acc. to ISO 1217  
(Annex C-1996)

0,53 – 3,47 m<sup>3</sup>/min

#### Operating pressure

5 – 13 bar

#### Cooling

Air-cooled

#### Drive

Direct and speed-controlled

#### Motor

Energy efficiency class IE 3; IP 55  
protection, protection class F



- + Volume flow can be adapted exactly to meet compressed air requirements
- + No switching cycles or expensive idle times
- + Energy-saving soft start without current peaks
- + Operating pressure can be freely selected between  $p_{\min}$  –  $p_{\max}$  in 0.1 bar/1.5 psig increments
- + The reduction in pressure can save money



**Air Control**

Smart controller that monitors, visualises and documents

**SCD frequency converter**

The integrated power pack; meets EMC guidelines

**Maintenance-friendly design**

Accessible from one side

**Unit cooler**

Efficient cooler for minimum coolant/ compressed air outlet temperatures

**Motor-compressor unit**

Highly efficient, vertically aligned drive system

Suitable controllers:

---

**AIR CONTROL B**



Standard

---

**AIR CONTROL P**



Optional

---

**AIR CONTROL HE**



Optional

---

Controllers starting on p. 42

# FLEX



FLEX  
Standard variant



FLEX  
Receiver variant



FLEX "PLUS"  
Variant with sub-mounted refrigeration dryer

50 Hz								
FLEX	Operating overpressure	Volume flow acc. to ISO 1217 (Annex C-1996)*		Rated motor power	Length	Width	Height	Weight
		min.	max.					
	bar	m <sup>3</sup> /min	m <sup>3</sup> /min	kW	mm	mm	mm	kg
6	5–13	0.53	0.85	5.5	870	590	990	165
7	5–13	0.53	1.19	7.5	870	590	990	165
11	5–13	0.53	1.70	11	870	590	990	180
15	5–13	0.53	2.10	15	870	590	990	190
16	5–13	1.39	2.79	15	1140	890	1315	285
18	5–13	1.06	3.16	18.5	1140	890	1315	295
22	5–13	1.06	3.47	22	1140	890	1315	325

\* V relates to an operating overpressure of 7 bar at 50 Hz / 100 psig at 60 Hz; heat recovery systems available

\*\* as "0" variant with sub-mounted refrigeration dryer and filter system for generating "oil-free" compressed air





FLEX "0"\*\*\*  
Variant with refrigeration dryer and filter system



FLEX "PLUS"  
Variant with receiver



FLEX "0"  
Variant with receiver

60 Hz								
FLEX	Operating overpressure	Volume flow acc. to ISO 1217 (Annex C-1996)*		Rated motor power	Length	Width	Height	Weight
		min.	max.					
	psig	acfm	acfm	HP	inch	inch	inch	lbs
6/7	75-190	17	30	7.5	34.3	23.2	39	364
7/10	75-190	22	42	10	34.3	23.2	39	364
11/15	75-190	17	61	15	34.3	23.2	39	397
15/20	75-190	26	76	20	34.3	23.2	39	419
16/21	75-190	49	100	20	44.9	35	51.8	628
18/25	75-190	37	113	25	44.9	35	51.8	650
22/30	75-190	37	126	30	44.9	35	51.8	717
30/40	75-190	37	143	40	44.9	35	51.8	805

# VARIABLE

## Compressors for maximum cost-effectiveness

The speed-controlled screw compressors of the VARIABLE series are the result of decades of experience in the field of energy-efficient solutions. They are designed for use under the toughest operating conditions and for applications with variable compressed air requirements. The system is therefore the right solution for high operational readiness and efficient compressed air supply.

Market analyses show that on average compressors only have a utilisation rate of around 50 – 70%. The maximum delivery volume is, however, only needed during peak times. The integrated ALMiG SCD technology, the benefits of which come to the fore in partial load applications, allows you to achieve an energy saving of up to 35%. The holistic SCD technology drive concept stands for **S**peed **C**ontrolled and **D**irect drive.

The directly driven, speed-controlled VARIABLE is unbeatable when coupled with the DIRECT series, which is also directly driven, as an "energy-saving duo".

### Achieve an energy saving of up to 35% through:

- Speed control
- Constant mains pressure, stepless from 5 to 13 bar
- Extremely good system efficiency
- No start-up changeover power peaks
- No expensive idle times

#### Application

#### Industry

#### Power output

VARIABLE I: 16 – 38 kW

VARIABLE II: 40 – 85 kW

VARIABLE III: 100 – 210 kW

VARIABLE IV: 260 – 355 kW

Volume flow acc. to ISO 1217  
(Annex C-1996):

1.07 – 55.55 m<sup>3</sup>/min

#### Operating pressure

5 – 13 bar (stepless)

#### Cooling

Air-cooled (standard)

Water-cooled (option as of 35 kW,  
only water-cooled as of 355 kW)

#### Drive

Direct and speed-controlled

#### Motor

Energy efficiency class IE 3; IP 55  
protection, protection class F



- + Efficient ALMiG SCD technology
- + Designed for use under the toughest operating conditions
- + Unbeatable energy efficiency in combination with the DIRECT series
- + Versatile use thanks to numerous possible extension options



**Maintenance-friendly design**

**Air Control**

Smart controller that monitors, visualises and documents

**Base frame**  
Torsion-resistant, liquid-tight design

**Horizontal separating tank**  
With external fine separator cartridges

**Control cabinet**  
Large with integrated frequency converter

Suitable controllers:

---

**AIR CONTROL B**



Standard (16 – 34 kW)

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**AIR CONTROL P**



Optional (16 – 34 kW)  
Standard (35 – 355 kW)

---

**AIR CONTROL HE**



Optional

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Controllers starting on p. 42

# VARIABLE



VARIABLE 16–34



VARIABLE 35–70

50 Hz								
VARIABLE	Operating overpressure	Volume flow acc. to ISO 1217 (Annex C-1996)*		Rated motor power	Length	Width	Height	Weight
		min.	max.					
Model	bar	m <sup>3</sup> /min	m <sup>3</sup> /min	kW	mm	mm	mm	kg
16	5–13	1.17	2.68	16	1270	890	1190	387
20	5–13	1.17	3.22	20	1270	890	1190	387
24	5–13	1.17	3.62	24	1545	890	1190	405
28	5–13	1.17	4.14	28	1545	890	1190	405
32	5–13	1.96	4.93	32	1545	890	1190	545
34	5–13	1.96	5.65	38	1545	890	1190	555
35	5–13	1.07	6.02	40	2090	1080	1600	940
37	5–13	1.07	6.52	50	2090	1080	1600	980
55	5–13	2.22	9.98	60	2090	1080	1600	1160
65	5–13	2.23	10.73	80	2090	1080	1600	1240
70	5–13	2.81	12.84	85	2090	1080	1600	1270
90	5–13	4.30	16.85	100	2300	1400	1860	2050
115	5–13	4.30	18.28	115	2300	1400	1860	2200
130	5–13	4.30	20.00	130	2300	1400	1860	2200
150	5–13	9.40	27.25	150	2700	1686	1888	3500
210	5–13	9.40	30.14	210	2700	1686	1888	3600
260	5–13	15.70	41.80	260	3950	1650	2025	4300
315	5–13	15.70	53.00	315	3950	1650	2025	4450
355	5–10	15.70	55.55	355	3950	1650	2025	4900

\* V relates to an operating overpressure of 7 bar at 50 Hz / 100 psig at 60 Hz; systems are air-cooled as standard / water-cooled as an option as of VARIABLE 35 model (VARIABLE 35 / 51), as of VARIABLE 315 model (VARIABLE 315 / 430) only water-cooled systems available; heat recovery systems available for all models; variants 16 – 30 are also available as "0" or "Plus" versions



VARIABLE 90-201

60 Hz								
VARIABLE	Operating overpressure	Volume flow acc. to ISO 1217 (Annex C-1996)*		Rated motor power	Length	Width	Height	Weight
		min.	max.					
	psig	acfm	acfm	HP	inch	inch	inch	lbs
16/20	75-190	41	95	20	50	35	46.9	853
20/25	75-190	41	115	25	50	35	46.9	853
24/30	75-190	41	130	30	60.8	35	46.1	892
28/40	75-190	41	148	40	60.8	35	46.1	892
32/45	75-190	69	176	45	60.8	35	46.9	1201
34/50	75-190	69	203	50	60.8	35	46.9	1223
35/51	75-190	38	216	50	82.3	42.6	63	2072
37/55	75-190	38	234	55	82.3	42.6	63	2160
55/80	75-190	78	356	80	82.3	42.6	63	2557
65/90	75-190	79	385	90	82.3	42.6	63	2734
70/95	75-190	99	461	95	82.3	42.6	63	2799
90/125	75-190	152	602	125	90.6	55.1	73.2	4519
115/155	75-190	152	652	155	90.6	55.1	73.2	4850
130/175	75-190	152	713	175	90.6	55.1	73.2	4850
150/200	75-190	332	976	200	106.3	66.4	74.3	7716
210/280	75-190	332	1078	280	106.3	66.4	74.3	7937
260/350	75-190	554	1476	350	155.5	65	79.7	9480
315/430	75-190	554	1901	430	155.5	65	79.7	10580
355/480	75-145	554	1990	480	155.5	65	79.7	10802

# LENTO

## Oil-free compressed air of outstanding quality

Our LENTO series generates 100% oil-free compressed air for all applications, where products of the highest quality are produced. Given that only water, the most natural of all raw materials, is used in the compression process, LENTO delivers maximum compressed air quality for highly sensitive areas e. g. the pharmaceutical, foodstuffs, electrical engineering and medical industries.

The speed-controlled direct drive of the LENTO series delivers maximum cost-effectiveness by precisely matching the volume flow to the respective compressed air requirement. The integrated refrigeration dryer ensures a low pressure dew point. Therefore, under certain circumstances, the customer doesn't need a separate refrigeration dryer. This avoids costs for the fresh water supply and water processing and minimises service and maintenance costs compared with other oil-free compression systems.

### Clean and ecological solution:

- Clean, environmentally friendly oil-free compressed air
- ISO class 0, certified in accordance with DIN ISO 8573-1:2010
- Dust particles that are drawn in are washed out by the water
- Clean condensate – pure water – can be discharged directly into the sewer system
- Very low temperatures during compression thanks to excellent heat transfer via the water. Reduced amounts of energy are therefore used to generate the compressed air

### Application

100% oil-free compressed air for industrial use (pharmaceutical, food, chemical, etc.)

### Power output

LENTO I: 15 – 30 kW

LENTO II: 30 – 55 kW

LENTO III: 45 – 80 kW

LENTO IV: 80 – 130 kW

Volume flow acc. to ISO 1217  
(Annex C-1996)

1.01 – 18.03 m<sup>3</sup>/min

### Operating pressure

LENTO I & II: 5 – 10 bar

LENTO III & IV: 5 – 13 bar

### Cooling

Water-cooled: (standard)

Air-cooled: (option)

Only water-cooled available as of LENTO 80

### Drive

Direct and speed-controlled

### Motor

Energy efficiency class IE 3;  
IP 55 protection, protection class F



- + 100% oil-free compressed air generation
- + Volume flow can be adapted exactly to meet compressed air requirements
- + No switching cycles or expensive idle times
- + Energy-saving soft start without current peaks
- + Operating pressure can be freely selected between  $p_{\min}$  –  $p_{\max}$  in 0.1 bar/1.5 psig increments
- + The reduction in pressure can save money



**SCD direct drive**

Zero-loss power transfer

**Compressor**

Single-stage, water-injected; very low compression temperatures of <math><60^{\circ}\text{C}</math>, close to isothermic, economical compression

**SCD motor**

Highly efficient drive motor, IP 55 protection class ISO F; compact, powerful, reliable

**Air Control**

Smart controller that monitors, visualises and documents



**Stainless steel piping**

**Integrated refrigeration dryer**

Permanent generation and exchange of the required coolant, optimum biological and chemical water quality, for dry compressed air at the compressed air outlet

**SCD frequency converter**

The integrated power pack, according to EMC guidelines

Suitable controllers:

**AIR CONTROL P**



Standard

**AIR CONTROL HE**



Optional

Controllers starting on p. 42

# LENTO



LENTO 15–30, air-cooled



LENTO 80, water-cooled

## 50 Hz speed-controlled

LENTO	Operating overpressure	Volume flow acc. to ISO 1217 (Annex C-1996)*		Rated motor power	Length	Width	Height	Weight
		min.	max.					
	bar	m <sup>3</sup> /min	m <sup>3</sup> /min	kW	mm	mm	mm	kg
15	5–10	1.01	2.34	15	1880	850	1660	850
18	5–10	1.01	2.87	18.5	1880	850	1660	860
22	5–10	1.01	3.38	22	1880	850	1660	870
30	5–10	1.01	4.30	30	1880	850	1660	920
31	5–10	2.04	5.08	30	2300	1400	1560	1470
37	5–10	2.04	6.14	37	2300	1400	1560	1520
45	5–10	2.04	7.13	45	2300	1400	1560	1550
55	5–10	2.04	8.19	55	2300	1400	1560	1590
46	5–13	2.51	8.58	45	2300	1400	1560	1700
56	5–13	2.51	9.97	55	2300	1400	1560	1750
70	5–13	2.51	11.56	70	2300	1400	1560	1800
80	5–13	2.51	12.28	80	2300	1400	1560	1850
81	5–13	4.57	15.50	80	2800	1400	1910	2150
90	5–13	4.57	17.23	90	2800	1400	1910	2280
110	5–13	4.57	18.03	130	2800	1400	1910	2280

\* V relates to an operating overpressure of 7 bar at 50 Hz / 100 psig at 60 Hz; LENTO 15–70 (15 / 20–70 / 95) water-cooled as standard, air-cooled as an option; LENTO 75 D (75 / 100 D) and LENTO 80–110 (LENTO 80 / 105–110 / 150) only available as water-cooled



60 Hz speed-controlled

LENTO	Operating overpressure	Volume flow acc. to ISO 1217 (Annex C-1996)*		Rated motor power	Length	Width	Height	Weight
		min.	max.					
	psig	acfm	acfm	HP	inch	inch	inch	lbs
15/20	75-145	36	83	20	74	33.5	65.4	1875
18/25	75-145	36	103	25	74	33.5	65.4	1895
22/30	75-145	36	121	30	74	33.5	65.4	1920
30/40	75-145	36	153	40	74	33.5	65.4	2030
31/41	75-145	72	182	40	90.6	55.1	61.4	3240
37/50	75-145	72	220	50	90.6	55.1	61.4	3350
45/60	75-145	72	255	60	90.6	55.1	61.4	3420
55/75	75-145	72	292	75	90.6	55.1	61.4	3510
46/61	75-190	89	306	60	90.6	55.1	61.4	3750
56/76	75-190	89	355	75	90.6	55.1	61.4	3860
70/95	75-190	89	412	95	90.6	55.1	61.4	3970
80/105	75-190	89	440	105	90.6	55.1	61.4	4080
81/106	75-190	161	554	105	110.2	55.1	75.2	4740
90/125	75-190	161	615	125	110.2	55.1	75.2	5030
110/150	75-190	161	637	175	110.2	55.1	75.2	5030

# CONTROLLERS

Smart monitoring,  
reliable documentation



**ALMIG**  
Compressor Systems



**Status**

Netzdruck 7,6 bar

Temperatur 76 °C

Status Lastlauf

Grafiken

Menü

18:42  
17.01.2013

Remote Restart

Lauf/Leertlauf

[www.almig.de](http://www.almig.de)

# NETWORKING WITH AIR CONTROL

## Internet-based remote monitoring

In the future it will be even easier to remotely monitor your compressed air generation thanks to visualisation via the ALMiG web server – regardless of where you happen to be at the time. The system ensures high reliability with convenient access to various parameters, prompt messages and comprehensive facts.

Up to ten compressors can be monitored in this way – regardless of the compressor type. The system works with both piston and screw or turbo compressors. The only prerequisite is that the web server is connected via an AIR CONTROL HE. State-of-the-art bus technology is used for the installation.

### Accessible parameters:

- Energy and compressed air balance, also available to download
- Overview of the compressor station with the operating statuses of each individual compressor
- Loaded / idle mode statistics of compressors
- Data on delivery volumes, volume flows and motor starts
- Detailed information about utilisation, network pressure and specific performance data
- Data on energy efficiency and maintenance

### The most important benefits:

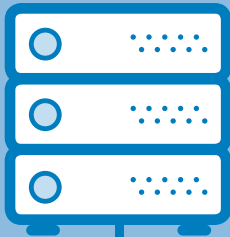
- Easy to operate via standard internet browser
- Can be accessed via company's own network or anywhere in the world via the Internet
- Dial-in protected by user ID
- Various parameters are depicted either in tables or graphs
- Continuous monitoring of all parameters of relevance to operation
- Active e-mail notification to up to 5 e-mail addresses in the event of warnings, maintenance work or faults
- Convenient transfer of all relevant data into Office programs such as MS Excel
- The parameters are displayed in a visually appealing way
- CSV files for further processing



Your web device

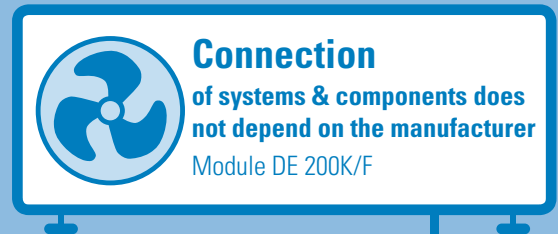
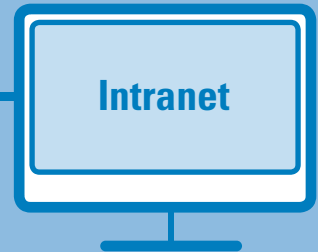


ALMiG web server

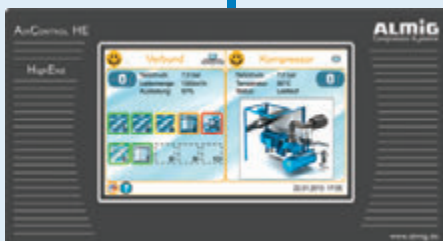


Network/Ethernet

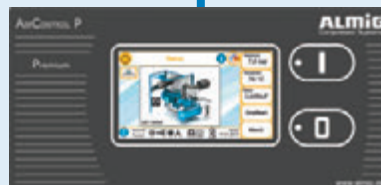
Intranet



RS 485 connection



AIR CONTROL HE



AIR CONTROL P



AIR CONTROL B

# AIR CONTROL

Monitored. Visualised. Documented.



Air Control Mini



Air Control B

Using the ALMiG AIR CONTROL family of controllers you can control, manage and monitor your entire compressed air supply system in the best possible way.

The smart, integrated compressor controllers offer you optimum operating convenience and outstanding cost-effectiveness. They deliver maximum reliability in the supply of compressed air and plan maintenance ahead of time.

The very latest microprocessor and communications technology is used, guaranteeing you seamless integration of all compressor models as well as the entire range of accessories. And all that as standard via the RS-485 data bus. The optional connectivity to a web server enables monitoring of your compressor station from anywhere in the world.

## Further functionality and benefits:

- Huge potential savings by reducing idling levels and lowering pressure levels
- Transparency when it comes to the compressors and accessories, at all times
- Reductions in maintenance time and downtimes

## AIR CONTROL MINI

- Icon display for the most important operating states, such as compression temperature, dew point and operating pressure
- Programmable automatic restart
- On-site operation – Remote on/off
- Fault memory (no. of positions)
- Refrigeration dryer activation

## AIR CONTROL B

- Microprocessor controller
- Illuminated colour LCD display
- Navigation using number keys
- Icon display for all the important operating states, such as mains pressure, final oil and compression temperature
- Maintenance interval indicator
- Fault memory
- Link to superordinate control systems
- Refrigeration dryer activation



Air Control P



Air Control HE

## AIR CONTROL P

- Microprocessor controller with colour touch screen and illuminated graphic display menu
- Supported user guidance
- Simple connection to all accessory components
- Can be integrated into the customer's own management systems
- Timer programming for optimum adaptation to operational requirements
- "System pass" – the compressor's identity card
- Various language variants available
- Various graphical depictions can be accessed, e.g. volume flow produced as daily and weekly profile
- Basic load cycle switching: another 4 additional compressors (slaves) can be added as master control device
- Fault memory
- Programmable automatic restart
- Extensive statistics with data logging
- System parameters can be saved to a data medium to reduce programming effort

## AIR CONTROL HE

### Version: Compressor and global control system

- Can be used as a consumption-dependent global control system for up to 10 compressors
- Excellent optical display and simplest possible operation using a 7" TFT colour touch screen
- Flexible installation into the compressor or into a separate control cabinet possible
- Extremely user-friendly thanks to simple configuration and start-up wizard
- Parameter settings can be saved to a data medium
- Comprehensive statistics can be accessed using the data-logging functionality

### Version: Global control system

- Quick access to information about the operating state of the connected compressors
- Graphical display of power and consumption profiles
- Split screen: compressor data and information about the network can be displayed in parallel
- Leaks can be identified and displayed
- Priorities can be allocated
- Energy-saving – all the compressors operate in one pressure tolerance range
- Speed-controlled compressors can be integrated seamlessly into the system
- Can be connected to higher-level control systems or a web server

# HEAT RECOVERY

Optimum energy use







# HEAT RECOVERY: REDUCE COSTS

Save energy easily and enjoy financial benefits quickly

The energy consumed for the generation of compressed air is converted almost entirely to heat. This is a high potential for savings since one compressed air station with a power requirement of 75 kW during 4000 operating hours, for example, will need approximately 300,000 kWh of power every year. Use this energy in the form of:

- Warm air to supplement space heating
- Warm water to support central heating
- Warm water for industrial water

## Heat energy at no additional cost to you!

The cost of fuel oil, gas, and other forms of energy continues to rise. As a result, the use of energy will increasingly influence the competitiveness of many companies. But the recovery of heat energy can boost overall energy efficiency and contribute to the company's profitability.

At the same time, the required investment is small: On average, related expenses pay for themselves in just a few months. This is an excellent opportunity to reclaim a portion of your operating costs!

## Heat recovery: determine your individualised benefits

How can your company specifically benefit from heat recovery? Perform custom calculations for clarity on your investment and payback period. This will give you a solid foundation for making decisions and provide detailed information on why you should take advantage of this opportunity.

## Saving money and protecting the environment can be easy

Every litre of fuel oil that you save reduces your CO<sub>2</sub> emissions by approximately 2.8 kg. Heat recovery systems pay for themselves after one-half to one year on average, depending on capacity utilisation and the level of energy costs.

## Examples of potential energy savings

Compressor rated output	Usable heat	Fuel oil savings/year <sup>1</sup>	Fuel oil cost savings/year <sup>1</sup>
From 6 kW	2.8 kW	700 l	€490.00
37 kW	27 kW	6,720 l	€4,704.00
45 kW	32 kW	8,170 l	€5,719.00
55 kW	40 kW	9,990 l	€6,993.00
75 kW	54 kW	13,620 l	€9,534.00
90 kW	65 kW	16,350 l	€11,445.00
110 kW	80 kW	19,980 l	€13,986.00
132 kW	95 kW	23,980 l	€16,786.00
160 kW	115 kW	29,060 l	€20,342.00
Up to 400 kW	288 kW	72,660 l	€50,870.00

<sup>1</sup> At 2,000 hours heat recovery/year

<sup>2</sup> At a fuel oil price of 0.70 €/litre and 2,000 hours heat recovery/year

## Warm air for space heating

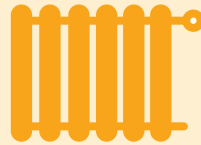
Possible temperature level:  
20 – 25°C above the ambient temperature



Heated cooling air is used via a duct for space heating

## Warm water for heating purposes

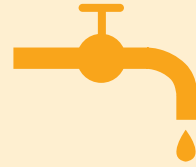
Possible water temperature up to 70°C



Compressor oil gives its heat to the heating water via plates

## Heat for industrial process water

Possible water temperature up to 70°C



Even in the case of leaks, safety heat exchanger prevents oil from entering industrial water

# 94%

## usable thermal energy

- 72% from the oil cooler
- 13% from the aftercooler
- 13% from the electric motor



High energy cost savings possible per compressor (see table on left)

6% unusable thermal energy

- 4% in compressed air
- 2% radiated heat

ALMiG compressor with integrated or retrofitted heat recovery



## Electrical energy

is converted almost entirely to heat



# SPEED CONTROL

Needs-based adaptation of delivery volumes





**ALMiG**  
Compressor Systems

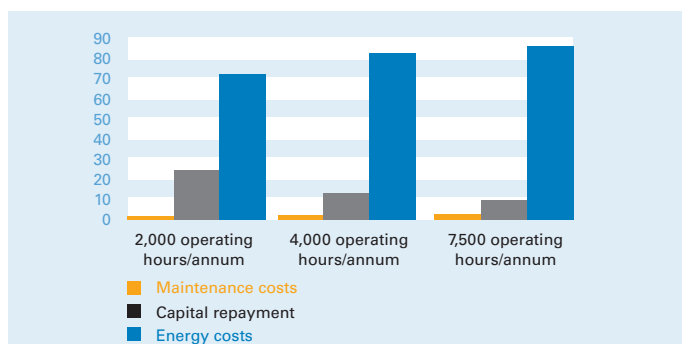
# INTELLIGENT SYSTEMS YOU CAN RELY ON

## Speed-controlled screw compressors

### Cost-effective and sustainable: Kind to your wallet and the environment.

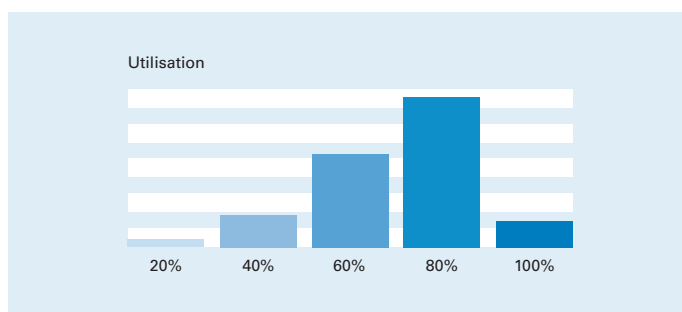
According to a study, approx. 80 billion kWh of electricity is used in compressed air systems in the EU each year, more than 10% of the electricity required in industry. So the cost-effectiveness of a compressed air system isn't about how much it costs to buy, but how much it costs to run on a day-to-day basis. And this is where speed-controlled screw compressors from ALMiG really come into their own:

- Precise adaptation of delivery volumes
- Fewer idle times
- Less load shedding
- Constant line pressure
- Direct drive
- Fewer leakages



### Capacity utilisation of the compressor: Flexible tolerance for greater cost-effectiveness.

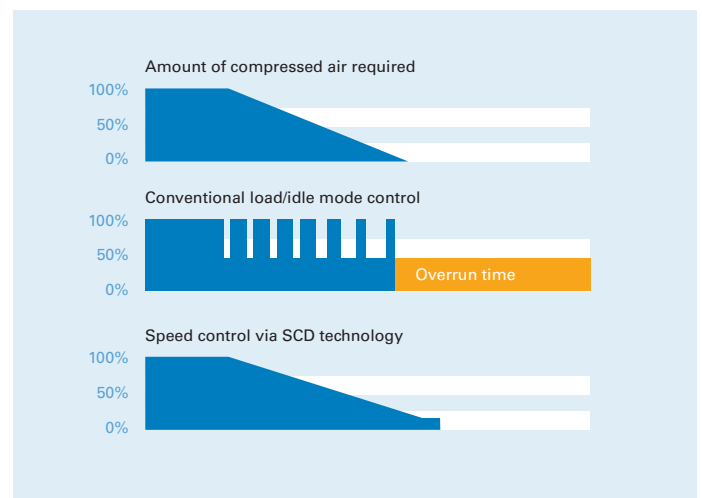
From experience, we know that most compressors are only used at between 50 and 70% of capacity. The maximum delivery volume is in most cases only used during peak times.



### Speed control: The key component of your compressed air system.

By varying the system's motor speed, you automatically and sensitively adapt its delivery volume to its variable air consumption.

- If you require more compressed air, you need simply increase the motor speed and therefore the compressor speed. The delivery volume increases.
- If you require less compressed air, you need simply decrease the motor speed and therefore the compressor speed. The delivery volume decreases.



### Precise adaptation of delivery volumes: No more annoying switching times.

If you're exploiting your system at 100% capacity, all compressors work at full load. If, however, you require less compressed air, the conventional compressor changes to loaded/idle mode, causing the drive motor to switch. In this situation, you have to take into account the pre-set over-run time. This has a negative impact on your energy bill.

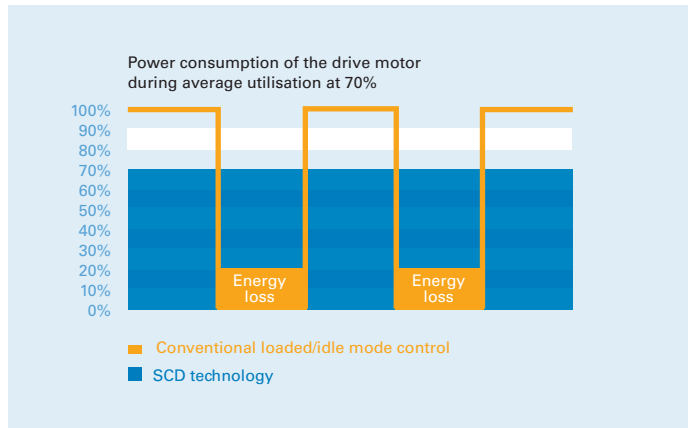
The Variable and V-Drive series vary their power by gently and continually changing speeds, not by abruptly switching on and off.

Delivery volumes are continually adapted to your present requirements, so the process is kind to both your components and your wallet:

- No expensive idle mode, which consumes at least 25 – 30% of the energy consumed at full load.
- No more switching times which place a heavy mechanical load on the components.

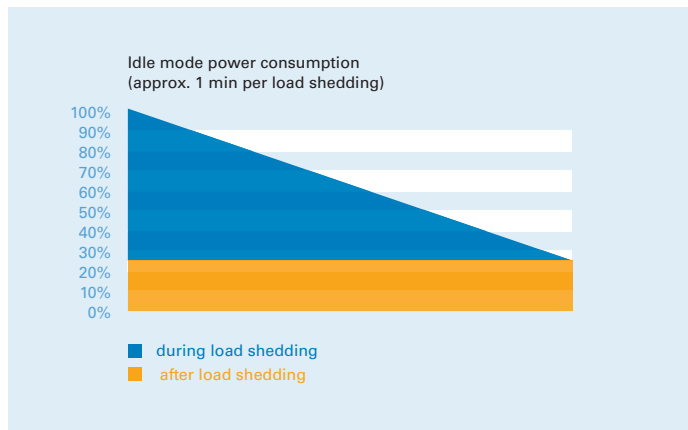
### Productivity without idle mode: the ALMiG efficiency programme

In idle mode, a compressor consumes around 25 to 30% of the energy consumed at full load. Variable compressors adjust the speed of the compression element automatically and exactly to the value needed for the volume flow required. SCD (Speed Control Direct drive) technology also ensures that only the power that corresponds to the speed is used. So compressors can considerably cut energy costs even when loaded at 70% of capacity.



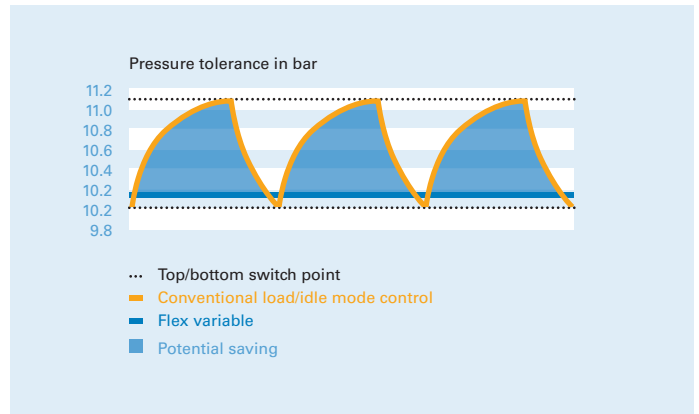
### Less load shedding in fluctuating networks

Fluctuating networks cause the compressor to constantly change from loaded to idle mode (and back again). Each time the compressor changes mode, it sheds its load for around one minute.



### A constant line pressure allows you to save a huge amount of energy

Speed-controlled compressors run at a constant operating pressure ( $p \sim 0.1$  bar). Because high pressure always involves consuming greater amounts of energy, speed-controlled compressors allow you to make huge energy savings (1 bar higher pressure = 6 – 8% greater energy consumption).



### ALMiG direct drive: The frictional connection

The compressor block is directly driven by the drive motor – and without any transmission loss.

#### This brings major benefits with it:

- Maximum power transfer
- Constant high efficiency of up to 99.9% over its entire working life
- Less noise and less maintenance effort than with V-belt and gear drives
- Excellent reliability.

#### Direct drive vs V-belt drive savings:

- V-belt drive (up to 96 – 97%)
- Direct drive (up to 99.9%) 4,000 h/year, 60 kW motor, 2.4 kW x 4,000 = 9,600 kWh

### Fewer leakages thanks to reduced pressure: Speed control provides the answer

Almost all compressed air lines have leakages. The amount they leak depends on the pressure in the piping, among other things. The average leakage rate of a compressed air station is around 20 – 30%. By decreasing the pressure by just 1 bar (e.g. by controlling the speed), these leakages drop by approx. 10%.

In addition, speed-controlled compressors with direct drive are very energy-efficient (no current peaks) and are also much quieter than comparable models with a V-belt drive.

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