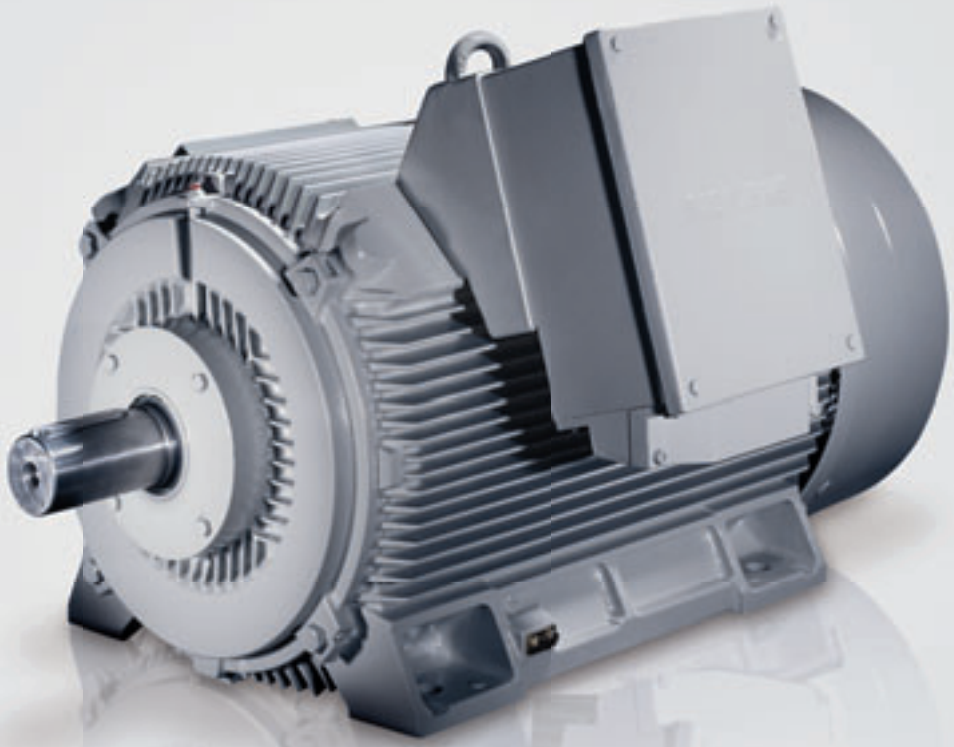
Higher performance and cost-effectiveness with outstanding reliability

N-compact



Motors

Answers for industry.

SIEMENS

The number one when it comes to availability and long service life

Today, nobody can afford downtimes. When all is said and done, high capital investments must be paid back quickly – and frequent maintenance and service calls and especially malfunctions have a huge negative impact on achieving this.

You are right in expecting that your drive system will support you in securing your investment – by being absolutely reliable. When designing our N-compact, we from Siemens placed special emphasis on this and it has proven thousands of times over that it is consistently reliable. And this is precisely the reason that after the motor has been installed, you probably no longer hear about it. N-compact also has a wide range of additional features which help to optimize your processes.

Already today, N-compact is setting the benchmark for large low-voltage three-phase motors – and that worldwide. Recently, the proven quality features have been further optimized in the form of additional innovative steps. The motors have many features to ensure that they have a long service life and are extremely rugged to handle tough conditions met in industrial applications.

However, N-compact doesn't only reflect the highest level of technology and mechanical design. It also distinguishes itself thanks to its high efficiency – with a reliability that is second to none. This didn't just happen by chance. It comes from our decades of experience in building motors and a very rugged design with gray cast-iron bearing end shields and frames, high corrosion resistance, the winding insulation system and the squirrel-cage rotor manufactured out of die-cast aluminum.

Performance you can depend on – N-compact

Rugged design for maximum reliability
You are always on the safe side with N-compact. The highest degree of reliability allows long maintenance intervals. This not only minimizes your maintenance costs, but also reduces your repair costs and avoids expensive plant downtimes. This is ensured as a result of the rugged design with high quality details such as gray cast-iron bearing end shields and frames, high degree of protection against corrosion, the winding insulation system and the squirrel-cage rotor manufactured out of die-cast aluminum.

A long lifetime for security of investment
With conventional rib-cooled motors, the single-sided external cooling automatically results in an uneven temperature

distribution – however, not for N-compact motors with an additional inner cooling circuit. This means that especially the stator winding overhangs, the rotor winding as well as the drive-end bearings are cooled. The thermal stressing is reduced which increases the operational reliability and therefore the lifetime of the motor. Further, the inner cooling circuit increases the effectiveness of the cooling so that the outer airflow can be reduced. Lower airflows and optimized aerodynamic design of all of the parts in the airflow result in low fan noise.

Certification for the highest quality
Products and systems from Siemens are considered a benchmark when it comes to quality – and that worldwide. This fully applies to our motors. All of the processes are subject to the proven quality management system from Siemens and therefore Standard ISO 9001 – from submitting the quotation through order processing, development, mechanical design and production up to customer service.

Space saving
A high power in a small space is one of the outstanding features of the N-compact. The compact design makes it easier to integrate the motors into the complete plant or system and reduces the overall dimensions.

High efficiency and therefore lower energy costs
The high efficiency is one of the essential benefits of the N-compact. This means that you profit from significant energy savings. Further, this leading-edge motor series is extremely quiet in operation. This means that noise protection measures are often just not necessary.

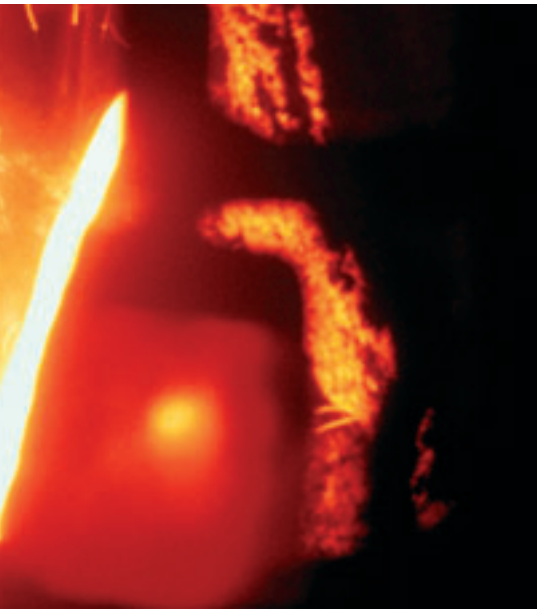
More than standard
We are offering you more than just a standard motor. You can select from an extensive range of options. This is the reason that we can implement motor solutions which are precisely tailored to your requirements.

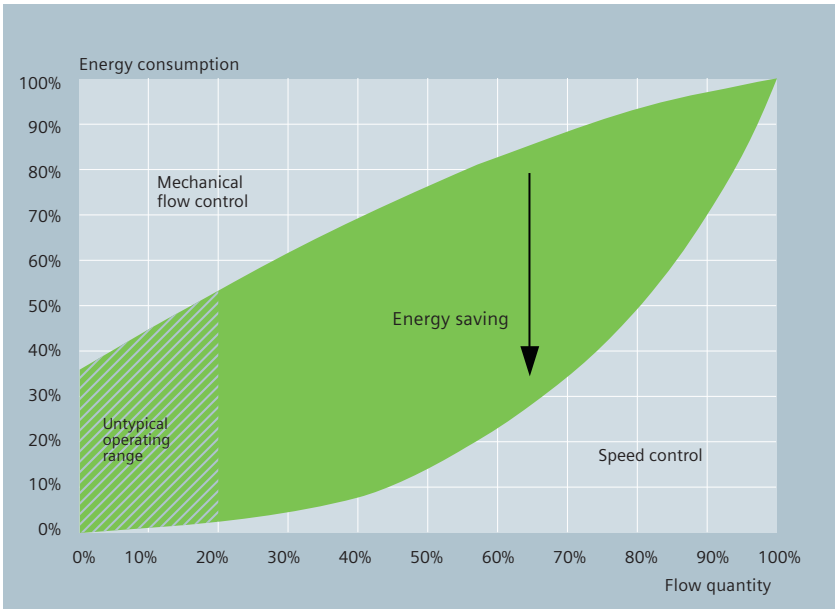
Motor type		Rated powers		
	Shaft height	2-pole	4-pole	6-pole
1LA8 315	315 mm	250 kW	250 kW	200 kW
1LA8 317		315 kW	315 kW	250 kW
1LA8 353	355 mm	355 kW	355 kW	–
1LA8 355		400 kW	400 kW	315 kW
1LA8 357		500 kW	500 kW	400 kW
1LA8 403	400 mm	560 kW	560 kW	450 kW
1LA8 405		630 kW	630 kW	500 kW
1LA8 407		710 kW	710 kW	560 kW
1LA8 453	450 mm	800 kW	800 kW	630 kW
1LA8 455		900 kW	900 kW	710 kW
1LA8 457		1000 kW	1000 kW	800 kW

Technology – down to the finest detail

Harmonized system solutions for variable-speed operation

System solutions, which are optimally tailored to your individual requirements, can be realized by combining our N-compact with SINAMICS® G150, G130, S150 or S120.





Lower energy consumption, especially for fans and pumps: SINAMICS G150 and G130
Drive converters allow high energy savings of up to 60%, in extreme cases even up to 70% by flexibly adapting the drive power to the plant or system requirements. The reason: Pumps, fans and compressors frequently operate in the partial load range. This means that for fixed-speed drives, the flow rate of the materials being transported must be reduced using a throttle. When flexible closed-loop speed control is not used, a large proportion of the drive power is wasted. And today, who can afford this?

More precise processes pay off:
In many instances, the use of AC drive converters permits more precise processes to be implemented. Soft starting and stopping using continuous closed-loop speed control reduce the stressing on the mechanical system of the plant. This reduces your operating costs and therefore plays a role in ensuring short payback times. Frequently, this takes just one or two years. For sophisticated drive tasks, system solutions are available with SINAMICS S150 for single-motor drives and SINAMICS S120 for multi-motor drives. N-compact motors are available in a forced-ventilated version which has been especially designed for constant-torque drives with a wide speed control range.

Extensive modular system for a high degree of flexibility: N-compact

8-pole
160 kW
200 kW
–
250 kW
315 kW
355 kW
400 kW
450 kW
500 kW
560 kW
630 kW

N-compact can be used in a wide range of industry sectors thanks to the many options. Chemical, paper, water/wastewater, steel and marine engineering are just a few examples. They are available in types of construction IM B3, IM B35 and IM V1 in compliance with DIN EN 60034-7. IP55 degree of protection is standard.

Gray cast-iron frame
- Shock- and vibration-proof by designing the cast-iron frame in-line with the expected stressing
- Extreme vibration stiffness using inner ribs around the motor frame
- Stable mounting to a base frame using wide box-type feet
- Large cooling surface using a large number of outer ribs

Gray cast-iron bearing end shields
- Inner and outer ribs for high strength and intensive heat dissipation
- Relubrication device with flat lubrication nipple according to DIN 3404
- Optional SPM measurement (Shock Pulse Measurement) for bearing monitoring

Corrosion protection
- Resistant against aggressive environments, e. g. high air humidity, high temperatures or dust- and salt-laden air
- Depending on the application multi-coat normal or special paint finishes
- Paint applied by dipping followed by manually applied paint using high-pressure spraying systems

Insulation system
- Durignit 2000 insulating system with VPI (Vacuum Pressure Impregnation) or current-UV procedure ensures a long lifetime and high reliability
- Temperature rise Class F, utilized to B
- High voltage strength for connection directly to the line supply and drive converter operation
- High mechanical strength for switching operations and vibration stressing

Rotor
- Squirrel-cage rotor manufactured out of die-cast aluminum to ensure high strength
- Cooling ducts for inner air cooling with a special fan independent of the direction of rotation
- Half-key balancing according to DIN VDE 0530/Part 14

Cooling system
- Two-circuit cooling system: An additional inner cooling circuit ensures even temperature distribution in the active motor area – for a longer lifetime and increased reliability
- Aerodynamically optimized fan shroud and fan result in reduced noise levels

Bearing system
- Optimized bearing design extends lubrication intervals and the bearing lifetime
- Locating bearings on the drive side
- Dimensioned for higher cantilever forces
- Preloaded locating bearings without play on the cooling side
- Low bearing temperature rise for high grease lifetime
- Relubrication device with grease quantity controller to secure the bearing lifetime
- V ring on the drive and cooling side

Connection system
- Generously dimensioned terminal box and terminals
- Staggered terminal arrangement
- Terminal boxes can be rotated
- Strain relief for cables

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Subject to change without prior notice
Order No.: E20001-A200-P530-X-7600
DISPO 21503
21/15415 MK.LD.XX.LDNM.52.8.02 WS 08085.
Printed in Germany

www.siemens.com/n-compact