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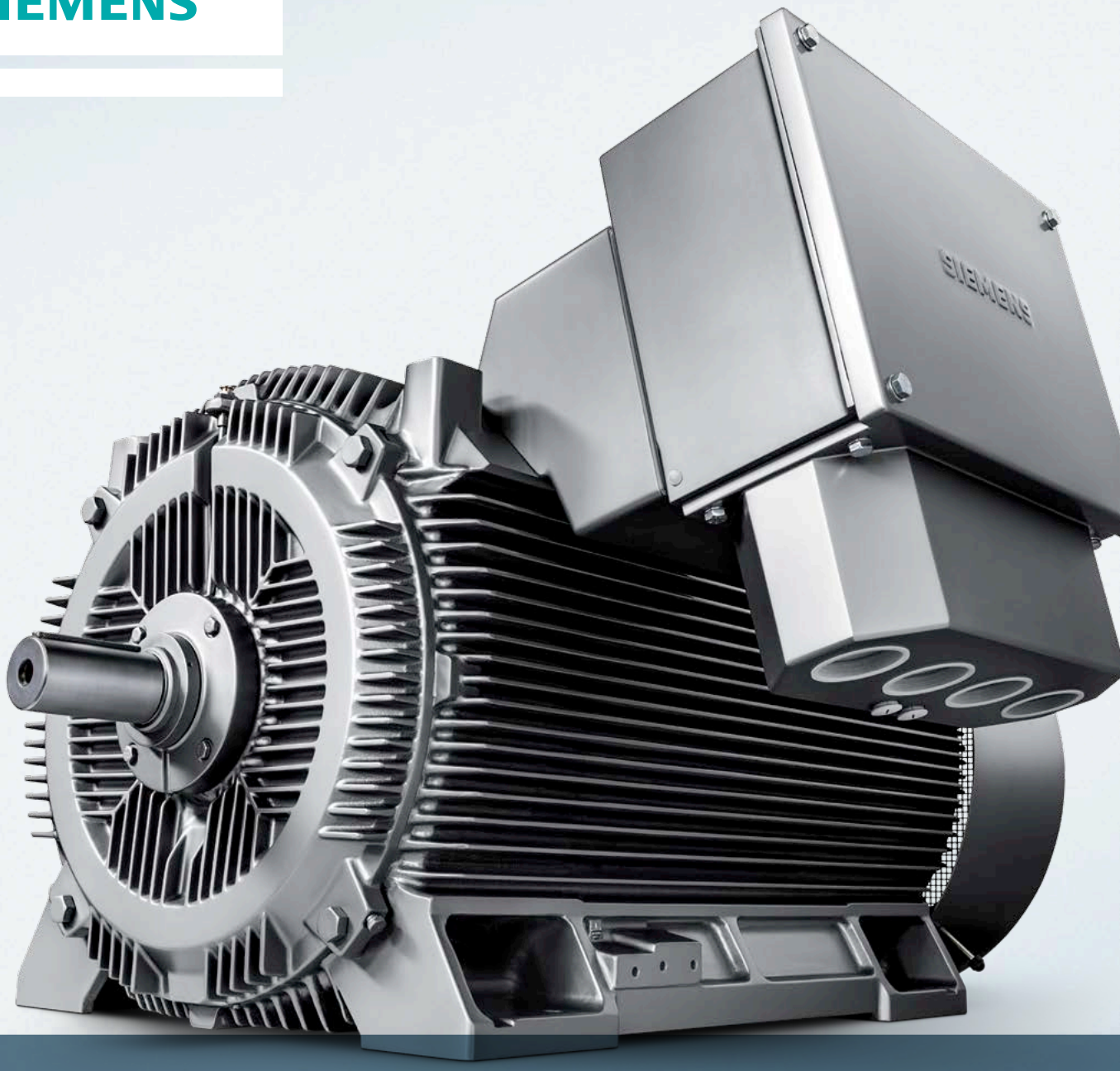


SIMOTICS TN Series N-compact

Higher performance and cost-effectiveness with outstanding reliability

siemens.com/n-compact

Answers for industry.

The number one motor 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 SIMOTICS series N-compact motor, Siemens placed special emphasis on the reliability of this motor. This is precisely the reason that after the motor has been installed, you probably no longer hear about it. This didn't just happen by chance. Series N-compact motors also have a wide range of additional features which help to optimize your processes.

Already today, SIMOTICS TN series N-compact is setting the worldwide benchmark for large low-voltage three-phase motors. 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.

SIMOTICS TN series N-compact not only reflects the highest level of technology and design. It also fulfills IE2 and IE3 efficiencies according to IEC 60034-30.

Siemens quality comes from our decades of experience in building motors with cast-iron bearing end shields and frames, high corrosion resistance, a winding insulation system and a squirrel-cage rotor manufactured out of die-cast aluminum.

Performance you can depend on – SIMOTICS TN series N-compact

Rugged design for maximum reliability
You are always on the safe side with SIMOTICS TN series N-compact. The highest degree of reliability allows long maintenance intervals. This not only minimizes your maintenance costs, but it 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 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.

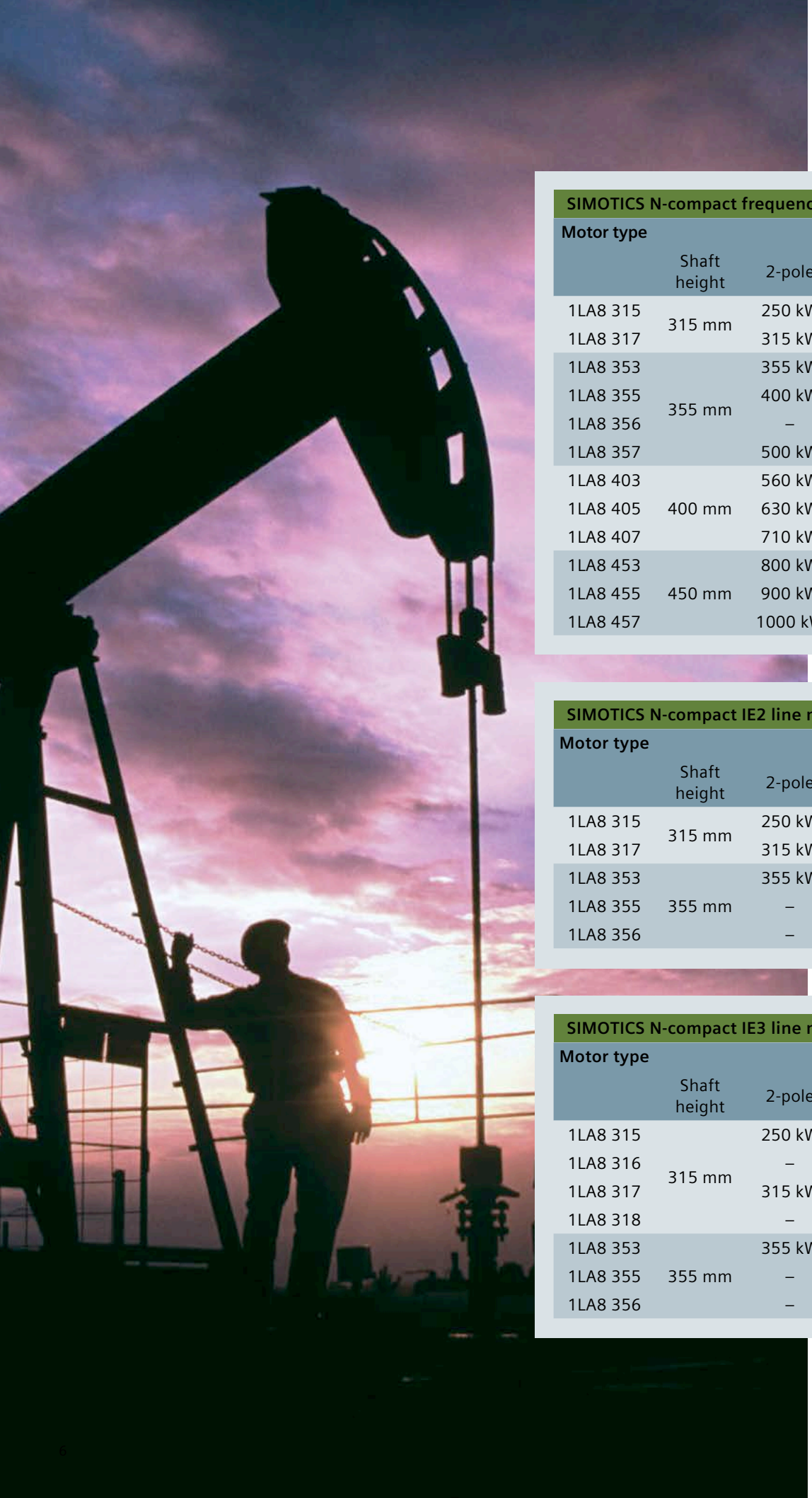
A long lifetime for security of investment
With conventional rib-cooled motors, the single-sided external cooling automatically results in an uneven temperature distribution – however, this is not the case for SIMOTICS TN series N-Compact motors with an additional inner cooling circuit. This means that the stator winding overhangs, the rotor winding as well as the drive-end bearings are also being 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 worldwide benchmark when it comes to quality. All of the processes are subject to the proven Siemens quality management system 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 output in a small space is one of the outstanding features of the series N-compact motors. The compact design makes it easier to integrate the motors into the complete plant or system and reduces the overall dimensions.

Fit for the future and energy saving
The decisive argument for series N-compact motors. Available with IE2 and IE3 efficiencies as standard up to 375 kW. As a result of the high efficiencies, you reduce the energy consumption and profit from the cost savings.

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



SIMOTICS N-compact frequency converter motors					
Motor type		**Rated power**			
	Shaft height	2-pole	4-pole	6-pole	8-pole
1LA8 315	315 mm	250 kW	250 kW	200 kW	160 kW
1LA8 317		315 kW	315 kW	250 kW	200 kW
1LA8 353	355 mm	355 kW	355 kW	–	–
1LA8 355		400 kW	400 kW	315 kW	250 kW
1LA8 356		–	–	355 kW	–
1LA8 357		500 kW	500 kW	400 kW	315 kW
1LA8 403	400 mm	560 kW	560 kW	450 kW	355 kW
1LA8 405		630 kW	630 kW	500 kW	400 kW
1LA8 407		710 kW	710 kW	560 kW	450 kW
1LA8 453	450 mm	800 kW	800 kW	630 kW	500 kW
1LA8 455		900 kW	900 kW	710 kW	560 kW
1LA8 457		1000 kW	1000 kW	800 kW	630 kW

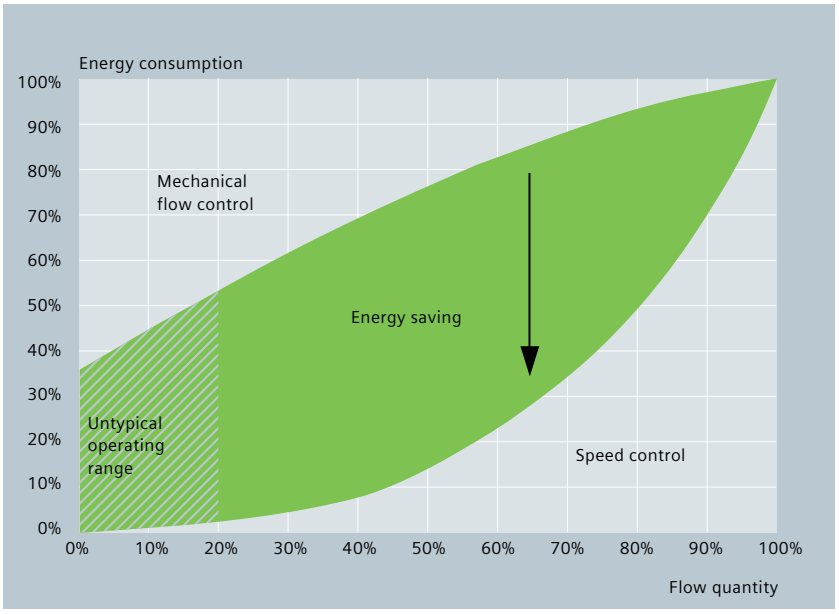
SIMOTICS N-compact IE2 line motors				
Motor type		**Rated power**		
	Shaft height	2-pole	4-pole	6-pole
1LA8 315	315 mm	250 kW	250 kW	200 kW
1LA8 317		315 kW	315 kW	250 kW
1LA8 353	355 mm	355 kW	355 kW	–
1LA8 355		–	–	315 kW
1LA8 356		–	–	355 kW

SIMOTICS N-compact IE3 line motors				
Motor type		**Rated power**		
	Shaft height	2-pole	4-pole	6-pole
1LA8 315	315 mm	250 kW	–	–
1LA8 316		–	250 kW	–
1LA8 317		315 kW	–	200 kW
1LA8 318		–	315 kW	250 kW
1LA8 353	355 mm	355 kW	355 kW	–
1LA8 355		–	–	315 kW
1LA8 356		–	–	355 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 SIMOTICS TN series N-compact with SINAMICS® G150, G130, S150 or S120.



Lower energy consumption, especially for fans and pumps: SINAMICS G150 and G130
Frequency 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 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. SIMOTICS TN series N-compact motors are available in a forced-ventilated version that has been specifically designed for constant-torque drives with a wider speed control range.

An extensive modular system for a high degree of flexibility – SIMOTICS TN series N-compact

SIMOTICS TN series N-compact can be used in a wide range of industry sectors thanks to its large variety of 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, IM V1, IM VS and IM V6 in compliance with DIN EN 60034-7. IP55 degree of protection is standard, and available optionally in IP23, IP56 and IP65.

Cast-iron frame
- Shock- and vibration-proof using an appropriately designed cast-iron frame to handle the expected load
- 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

Cast-iron bearing end shields
- Inner and outer ribs for high strength and intensive heat dissipation
- Relubrication port 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 employing VPI (Vacuum Pressure Impregnation) or the current-UV technique ensures a long lifetime and high reliability
- Temperature class 155(F), utilized to 130(B) for line operation (DOL); temperature class 155(F) utilized to 155(F) for converter operation (VSD); Class 180 (H) system is optionally available
- High voltage strength for line and converter operation
- High mechanical strength to withstand switching operations and vibration

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

Cooling system
- Two separate cooling circuits: The inner circuit ensures an even temperature distribution in the active motor area – for a longer service life and higher reliability
- Aerodynamically optimized fan cowl and fan result in lower 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 that can be rotated are optionally available
- Strain relief for cables

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