

Technical Documentation



TRANSNORM
HIGH VOLTAGE MOTORS
IC 411

ATB SEVER
Technology in Motion

Mission, Vision, Targets



Our electric motors and generators are optimized in accordance with our client's technical and economical requests. Our clients will receive from us, within a very short notice, most advanced and high quality technical solutions of electric motors, generators, electric drives and complete technical solutions of small and middle sized hydroelectric power plants, along with economically most favourable conditions.

We are constantly moving your ideas. We are not just manufacturing motors and generators, we turn ambitious concepts of our clients into advanced, innovative and reliable products, which are unique and future oriented. Our reliability, creativity and flexibility will assist our clients in achieving their goals.

Keeping track with newest technological and technical solutions, our products are being constantly developed and therefore we are improving all our activities aimed to fulfil our client's requests. Our view of the future is oriented towards development of high power and big sized electric motors, hydrogenerators for small and middle sized hydroelectric power plants, as well as electric motors designed for extreme working conditions and most complex technical requirements.

TRANSNORM MOTORS

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High Voltage

| | |
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TRANSNORM MOTORS

2 Our philosophy

As a competent full-range supplier of bespoke highly efficient electrical drives, we are ready to meet the challenges on a global market.

We find the perfect solution together with our customers and partners for their individual drive applications using our comprehensive development and production competences.

Our product range is as diverse as our customers' needs, leading to highly efficient solutions such as the transnorm motor range.

The transnorm motor range is now upgraded with a IC411 motor family with improved cooling system, providing state of the art performance while committed to our tradition as application expert and development partner.

The highly efficient new motor range has been developed by an international team of ATB specialists bringing together our joint values and expertise and will be produced as new platform on selected sites.

The ATB group represents innovative drive solutions and continually invests in the development of electrical motors and systems to meet the specific requirements of tomorrow.

Characteristics

Performance parameters

- ⚡ Power range from 160 kW to 1600 kW
- ⚡ High efficiency up to 97 %
- ⚡ Comprehensive range of high and low voltage from 2 to 8 poles
- ⚡ IE3 up to 375 kW (acc. EN 60034-30:20129)
- ⚡ Enclosure IP 55 standard, optional IP 65, IP 56, IP 65

Special attributes

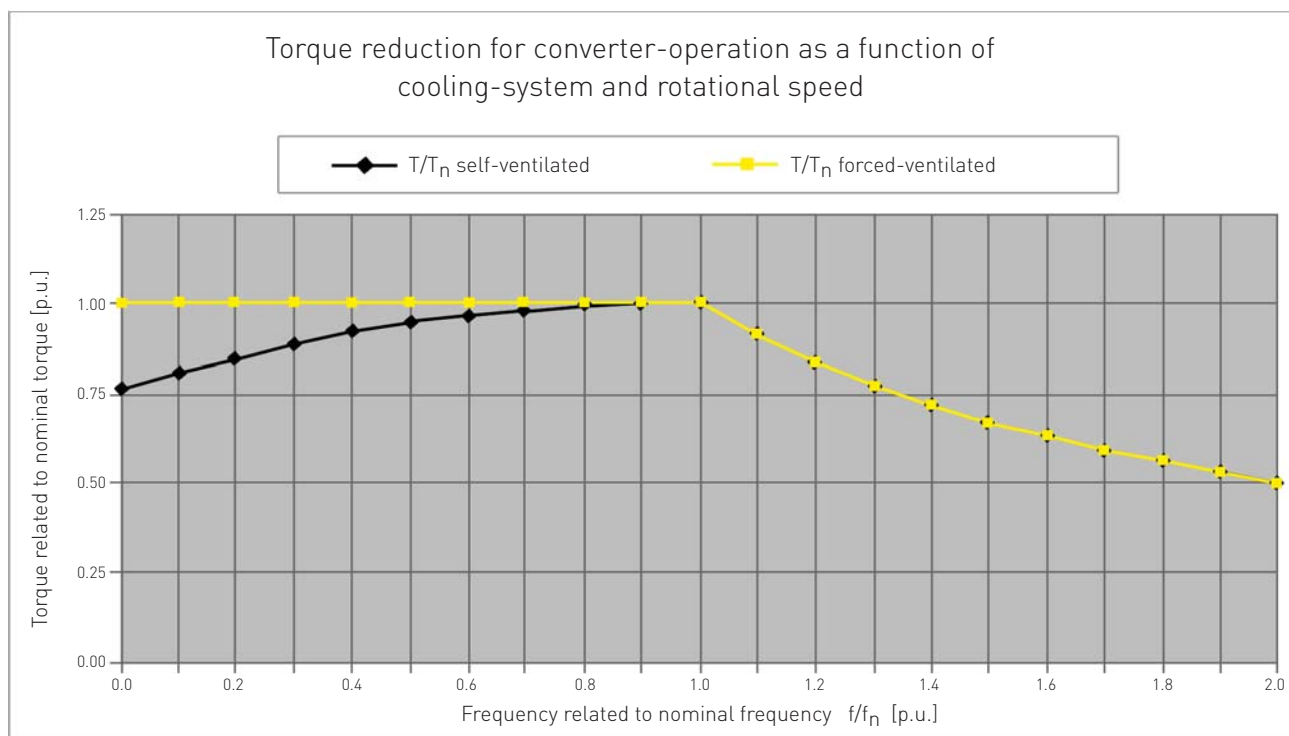
- ⚡ Increased power to weight ratio
- ⚡ Optimized design to maximize performance
- ⚡ Improved cooling system IC 411
- ⚡ Lower bearing temperature and easy maintenance
- ⚡ Reduced noise level
- ⚡ Multi-position terminal box
- ⚡ Universal mounting position
- ⚡ Easy customization with modular add-on accessories
- ⚡ Suitable for use with inverter drives
- ⚡ Developed with Computational Fluid Dynamics (CFD)
- ⚡ Easy to fit in multiple industrial application and segments
- ⚡ Worldwide product and service support

Low voltage range

| Performance parameters | | | | | | | | | |
|------------------------|----|---------|---------|---------|-----------|-----------|-------------|-------------|-------|
| Frame size | mm | 315 | 355 | 400 | 450 | 500 | 560 | 630 | 710 |
| Power range | kW | 200-500 | 450-650 | 400-800 | 650-1,150 | 900-1,500 | 1,250-2,000 | 1,900-2,140 | 3,000 |

High voltage range

| Performance parameters | | | | | | | | | |
|------------------------|----|---------|---------|---------|-----------|-----------|-------------|-------------|-------------|
| Frame size | mm | 315 | 355 | 400 | 450 | 500 | 560 | 630 | 710 |
| Power range | kW | 160-400 | 225-600 | 355-800 | 560-1,250 | 710-1,800 | 1,250-2,250 | 1,800-3,000 | 2,600-4,000 |



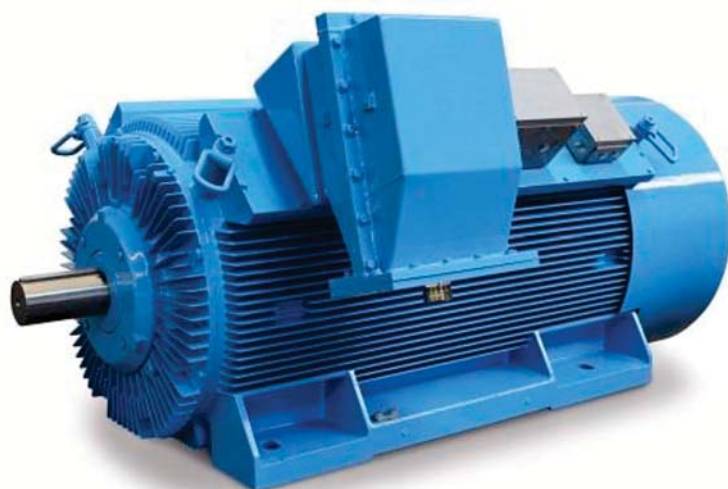
TRANSNORM MOTORS

4 Technical data

| | Low voltage range | High voltage range |
|--------------------------------------|------------------------------------|--------------------|
| Voltage | 400/690 V | 3,6/6/11 kV |
| Power | 200-3,000 kW | 160-4,000 kW |
| Frequency | 50/60 Hz | 50/60 Hz |
| Motor type | asynchronous motor with cage rotor | |
| Starting | direct, duty type S1 | |
| Class of insulation | F | |
| Temperature rise class | B (F*) | |
| Degree of protection | IP 55 | |
| Degree of protection of terminal box | IP 65 | |
| Method of cooling | IC 411 | |
| Type of construction | IMB3, IMV1 | |
| Ambient temperature | -20°C up to 40°C | |
| Altitude | up to 1,000 m above sea level | |

* Inverter drive motor

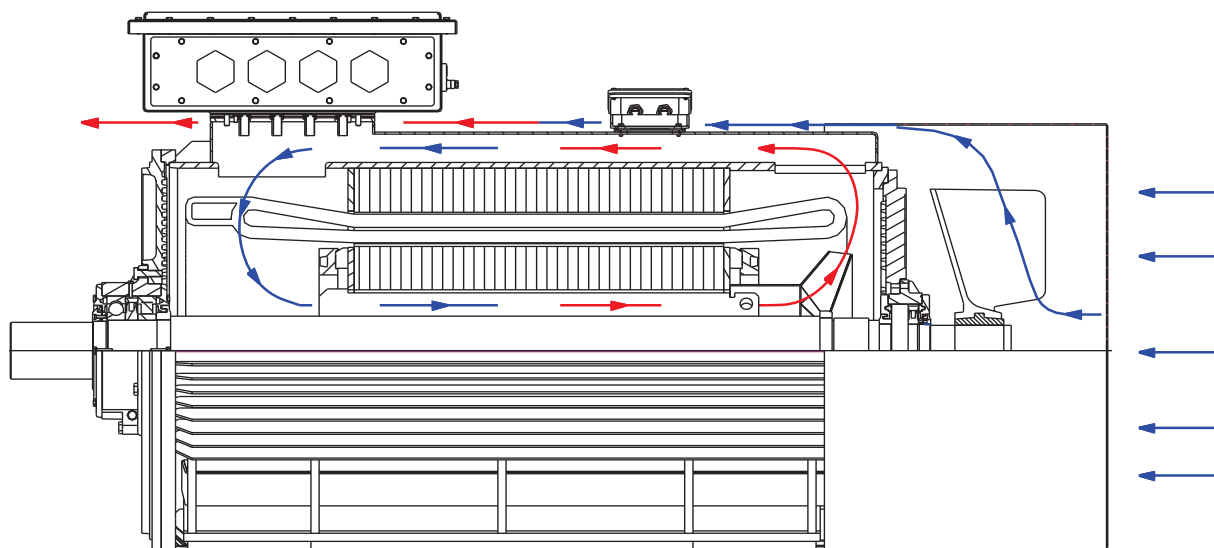
Subject to modifications



Cooling with the own fan, method of cooling IC411, motor series 5.ZK

Motors with housings with ribs and the own ventilation have technically sophisticated concept of cooling, which corresponds to method of cooling IC411 according to IEC 60034-6 with additional internal circulation circuit. As shown in the drawing, the fan is placed on the non-drive end side. It sucks air from the outside and pushes it axially along the external cooling ribs of the housing. Heat exchange is done in the internal cooling circuit, which ensures uniform temperature distribution in the active motor part and in the bearings' areas.

Fans which push the cooling air inside and outside are mounted on the motor shaft and have a role in significant reduction of noise regarding its optimized aerodynamic design.



Motor protection

Many standard and optional devices for monitoring and protection are available.

| Protective device | Description |
|-----------------------------|---|
| Stator winding monitoring | Standard equipment is 6 x Pt100 resistors for temperature monitoring |
| Rolling bearings monitoring | Standard equipment is one Pt100 resistor for temperature monitoring per bearing. Optional – nipple for impact impulse measuring. |
| Heaters | 300 W - 600 W |

TRANSNORM HV MOTORS

6 Characteristics

Vibrations

Horizontal motors up to 3600 min^{-1} meet A vibration level according to IEC 60034-14. Vibration level B is available as an option. The values of vibration for vertical motors we give on request.

Balance quality

Rotors are dynamically balanced with a half key. Balancing quality is G2.5 according to ISO 1940, for speed up to and including 1500 min^{-1} .

Rotation direction, fan

Rotation direction has to be defined for every order. For motor size 450 up to 5600 the external fan is foreseen for one rotation direction.

Standards and regulations

Motors meet appropriate standards and regulations, especially those specified in the following table.

| Title | IEC designation |
|---|-----------------|
| Rotating electrical machines – Part 1: Rating and performance | IEC60034-1 |
| Rotating electrical machines – Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) – Classification | IEC60034-5 |
| Rotating electrical machines - Part 6: Methods of cooling (IC Code) | IEC60034-6 |
| Rotating electrical machines – Part 7: Classification of types of construction, mounting arrangements and terminal box position (IM Code) | IEC60034-7 |
| Rotating electrical machines – Part 8: Terminal markings and direction of rotation | IEC60034-8 |
| Rotating electrical machines – Part 14: Mechanical vibration of certain machines with shaft heights 56 mm and higher – Measurement, evaluation and limits of vibration severity | IEC60034-14 |
| Rotating electrical machines – Part 15: Impulse voltage withstand levels of rotating a.c. machines with form-wound stator coils | IEC60034-15 |
| Electrical insulation - Thermal evaluation and designationMechanical vibration -- Balance quality requirements for rotors in a constant (rigid) state -- Part 1: Specification and verification of balance tolerances | IEC60085 |
| Rotating electrical machines - Part 2-1: Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles) | IEC60034-2-1 |

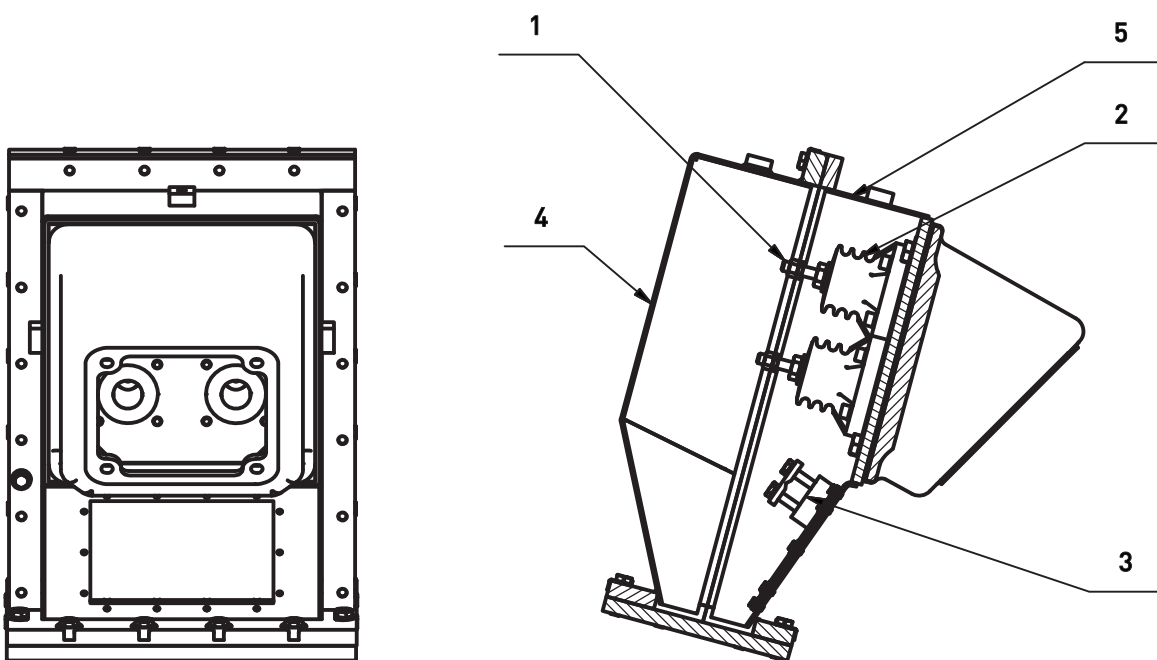
Table of bearings for motors IM B3

| Size | Mounting arr. | Poles | DE side | NDE side | Grease quantity (cm ³) | Lubrication period (h) | | | |
|------|---------------|-------|-----------|----------------------|------------------------------------|------------------------|------|------|------|
| | | | | | | 2p=2 | 2p=4 | 2p=6 | 2p=8 |
| 315 | B3 | 2 | 6317 C3 | 6317 C3 | 46/46 | 1400 | | | |
| | | >=4 | 6322 C3 | 6322 C3 | 75/75 | | 3000 | 4900 | 6300 |
| | V1 | 2 | 6317 C3 | 6317 C3/C4 | 46/46 | 1400 | | | |
| | | >=4 | 6322 C3 | 6322 C3/C4 | 75/75 | | 3000 | 4900 | 6300 |
| 355 | B3 | 2 | 6317 C3 | 6317 C3 | 46/46 | 1400 | | | |
| | | >=4 | 6322 C3 | 6322 C3 | 75/75 | | 3000 | 4900 | 6300 |
| | V1 | 2 | 6317 C3 | 6317 C3/C4 | 46/46 | 1400 | | | |
| | | >=4 | 6322 C3 | 6322 C3/C4 | 75/75 | | 3000 | 4900 | 6300 |
| 400 | B3 | 2 | 6317 C3 | 6317 C3 | 46/46 | 1400 | | | |
| | | >=4 | 6324 C3 | 6324 C3 | 90//90 | | 2700 | 4500 | 5900 |
| | V1 | 2 | 6317 C3 | 6317 C4 | 46/46 | 1400 | | | |
| | | >=4 | 6324 C3 | 6324 C3 | 90/90 | | 2700 | 4500 | 5900 |
| 450 | B3 | >=4 | 6326 M C3 | 6326 M C3 | 105/105 | | 2500 | 4200 | 5500 |
| | V1 | >=4 | 6326 M C3 | 7326B + 6326 C3 | 105/105+105 | | 2000 | 3500 | 4500 |
| 500 | B3 | >=4 | 6326 M C3 | 6326 M C3 | 105/105 | | 2500 | 4200 | 5500 |
| | V1 | >=4 | 6326 M C3 | 7326 B M + 6326 M C3 | 105/105+105 | | 2000 | 3500 | 4500 |
| 560 | B3 | >=4 | 6330 C3 | 6330 C3 | 120/120 | | 2000 | 3500 | 4500 |
| | V1 | >=4 | 6330 C3 | 7330 B M + 6330 C3 | 120/120+120 | | 1700 | 3000 | 3800 |

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8 Characteristics

Drawings of terminal boxes



| Item | Part |
|------|----------------------|
| 1 | Connection Terminal |
| 2 | Bushing |
| 3 | Earth Terminal |
| 4 | Terminal Box Cover |
| 5 | Terminal Box Housing |

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6 kV; 50 Hz

| Type | Power P _n kW | Nominal speed n 1/min | Motor efficiency η % | Power factor cosφ | Nominal current I _n A | Start current I _s /I _N | Nominal torque T _n Nm | Start torque T ₀ /T _N | Maximum torque T _m /T _n | Momentum of inertia J kgm ² | Weight m kg |
|----------------|-------------------------------|--------------------------------|-------------------------------|-------------------------|---|--|---|---|---|---|-------------------|
| 2p = 2 | | | | | | | | | | | |
| 5.ZK 6315 La-2 | 160 | 2967 | 94,5 | 0,88 | 19 | 6,1 | 515 | 0,80 | 2,4 | 2,3 | 1600 |
| 5.ZK 6315 Lb-2 | 180 | 2968 | 94,7 | 0,88 | 21 | 6,1 | 575 | 0,80 | 2,4 | 2,3 | 1620 |
| 5.ZK 6315 Lc-2 | 250 | 2969 | 94,8 | 0,88 | 29 | 6,1 | 800 | 0,80 | 2,4 | 2,5 | 1770 |
| 5.ZK 6315 Ld-2 | 315 | 2970 | 95,0 | 0,88 | 36 | 6,2 | 1010 | 0,80 | 2,4 | 2,8 | 1920 |
| 5.ZK 6315 Le-2 | 355 | 2973 | 95,1 | 0,88 | 41 | 6,2 | 1140 | 0,80 | 2,4 | 3,1 | 2100 |
| 5.ZK 6355 La-2 | 400 | 2975 | 95,3 | 0,88 | 46 | 6,3 | 1285 | 0,80 | 2,4 | 4,5 | 2400 |
| 5.ZK 6355 Lb-2 | 450 | 2977 | 95,6 | 0,89 | 51 | 6,4 | 1445 | 0,80 | 2,4 | 4,9 | 2540 |
| 5.ZK 6355 Lc-2 | 500 | 2977 | 95,8 | 0,89 | 56 | 6,4 | 1605 | 0,80 | 2,4 | 5,3 | 2680 |
| 5.ZK 6400 La-2 | 560 | 2977 | 95,9 | 0,89 | 63 | 6,4 | 1796 | 0,80 | 2,4 | 8,0 | 3240 |
| 5.ZK 6400 Lb-2 | 630 | 2977 | 96,0 | 0,89 | 71 | 6,5 | 2023 | 0,80 | 2,4 | 8,6 | 3360 |
| 5.ZK 6400 Lc-2 | 710 | 2977 | 96,2 | 0,89 | 80 | 6,5 | 2280 | 0,80 | 2,4 | 9,8 | 3540 |
| 4.ZK 6450 La-2 | 800 | 2977 | 96,2 | 0,89 | 90 | 6,5 | 2569 | 0,80 | 2,4 | 17,2 | 4650 |
| 4.ZK 6450 Lb-2 | 900 | 2977 | 96,3 | 0,89 | 101 | 6,5 | 2890 | 0,80 | 2,4 | 19,0 | 4900 |
| 4.ZK 6500 La-2 | 1000 | 2979 | 96,4 | 0,90 | 111 | 6,6 | 3200 | 0,80 | 2,4 | 21,1 | 5230 |
| 4.ZK 6500 Lb-2 | 1120 | 2979 | 96,5 | 0,90 | 124 | 6,6 | 3586 | 0,80 | 2,4 | 28,0 | 6050 |
| 4.ZK 6500 Lc-2 | 1250 | 2979 | 96,6 | 0,90 | 138 | 6,6 | 4002 | 0,80 | 2,4 | 32,0 | 6250 |
| 2p = 4 | | | | | | | | | | | |
| 5.ZK 6315 La-4 | 200 | 1480 | 93,9 | 0,86 | 24 | 6,0 | 1288 | 0,85 | 2,3 | 2,9 | 1570 |
| 5.ZK 6315 Lb-4 | 250 | 1480 | 94,4 | 0,86 | 30 | 6,0 | 1610 | 0,85 | 2,3 | 3,6 | 1725 |
| 5.ZK 6315 Lc-4 | 315 | 1481 | 94,7 | 0,86 | 37 | 6,0 | 2028 | 0,85 | 2,3 | 4,1 | 1940 |
| 5.ZK 6315 Ld-4 | 355 | 1482 | 95,1 | 0,86 | 42 | 6,0 | 2285 | 0,85 | 2,3 | 4,9 | 2090 |
| 5.ZK 6355 La-4 | 400 | 1484 | 95,1 | 0,87 | 47 | 6,0 | 2578 | 0,85 | 2,4 | 6,2 | 2380 |
| 5.ZK 6355 Lb-4 | 450 | 1484 | 95,2 | 0,87 | 52 | 6,0 | 2895 | 0,85 | 2,4 | 6,7 | 2530 |
| 5.ZK 6355 Lc-4 | 500 | 1484 | 95,4 | 0,87 | 58 | 6,0 | 3222 | 0,85 | 2,4 | 7,3 | 2680 |
| 5.ZK 6355 Ld-4 | 560 | 1484 | 95,6 | 0,86 | 66 | 6,0 | 3603 | 0,85 | 2,4 | 8,3 | 2840 |
| 5.ZK 6400 La-4 | 630 | 1486 | 95,5 | 0,86 | 74 | 6,1 | 4051 | 0,85 | 2,4 | 11,8 | 3500 |
| 5.ZK 6400 Lb-4 | 710 | 1486 | 95,6 | 0,87 | 82 | 6,2 | 4566 | 0,85 | 2,4 | 13,2 | 3730 |
| 5.ZK 6400 Lc-4 | 800 | 1486 | 95,9 | 0,87 | 92 | 6,2 | 5144 | 0,85 | 2,4 | 14,9 | 3950 |
| 4.ZK 6450 La-4 | 900 | 1486 | 96,0 | 0,88 | 103 | 6,3 | 5788 | 0,85 | 2,4 | 24,0 | 5060 |
| 4.ZK 6450 Lb-4 | 1000 | 1486 | 96,2 | 0,88 | 114 | 6,3 | 6431 | 0,85 | 2,4 | 27,2 | 5350 |
| 4.ZK 6450 Lc-4 | 1120 | 1488 | 96,4 | 0,88 | 127 | 6,3 | 7202 | 0,85 | 2,4 | 31,0 | 5650 |
| 4.ZK 6500 La-4 | 1250 | 1488 | 96,5 | 0,89 | 140 | 6,4 | 8038 | 0,85 | 2,3 | 37,0 | 6280 |
| 4.ZK 6500 Lb-4 | 1400 | 1488 | 96,6 | 0,89 | 157 | 6,5 | 8986 | 0,85 | 2,3 | 42,0 | 6770 |
| 4.ZK 6500 Lc-4 | 1600 | 1488 | 96,6 | 0,89 | 179 | 6,5 | 10270 | 0,85 | 2,3 | 50,0 | 7440 |
| 2p = 6 | | | | | | | | | | | |
| 5.ZK 6315 La-6 | 160 | 983 | 93,7 | 0,79 | 21 | 5,3 | 1554 | 0,75 | 2,1 | 4,5 | 1740 |
| 5.ZK 6315 Lb-6 | 180 | 984 | 93,8 | 0,80 | 23 | 5,4 | 1734 | 0,80 | 2,2 | 4,7 | 1830 |
| 5.ZK 6315 Lc-6 | 200 | 984 | 94,0 | 0,80 | 26 | 5,4 | 1942 | 0,80 | 2,2 | 5,1 | 1900 |
| 5.ZK 6315 Ld-6 | 250 | 985 | 94,1 | 0,80 | 32 | 5,4 | 2427 | 0,80 | 2,2 | 6,1 | 2110 |
| 5.ZK 6315 Le-6 | 315 | 987 | 94,7 | 0,84 | 38 | 5,4 | 3058 | 0,80 | 2,2 | 7,7 | 2350 |
| 5.ZK 6355 La-6 | 355 | 987 | 94,8 | 0,84 | 43 | 5,4 | 3447 | 0,80 | 2,3 | 12,6 | 2600 |
| 5.ZK 6355 Lb-6 | 400 | 987 | 94,9 | 0,84 | 48 | 5,4 | 3884 | 0,80 | 2,3 | 14,8 | 2840 |
| 5.ZK 6355 Lc-6 | 450 | 987 | 95,0 | 0,84 | 54 | 5,4 | 4354 | 0,80 | 2,3 | 17,1 | 2990 |
| 5.ZK 6400 La-6 | 500 | 987 | 95,2 | 0,84 | 60 | 5,6 | 4835 | 0,80 | 2,3 | 22,0 | 3560 |
| 5.ZK 6400 Lb-6 | 560 | 988 | 95,3 | 0,84 | 67 | 5,6 | 5412 | 0,80 | 2,3 | 24,3 | 3760 |
| 5.ZK 6400 Lc-6 | 630 | 988 | 95,4 | 0,84 | 76 | 5,6 | 6092 | 0,80 | 2,3 | 27,5 | 4000 |
| 4.ZK 6450 La-6 | 800 | 989 | 95,7 | 0,84 | 96 | 5,8 | 7721 | 0,85 | 2,4 | 42,0 | 5230 |
| 4.ZK 6450 Lb-6 | 900 | 989 | 95,9 | 0,84 | 108 | 5,8 | 8686 | 0,85 | 2,4 | 56,0 | 5600 |
| 4.ZK 6450 Lc-6 | 1000 | 989 | 96,1 | 0,84 | 119 | 5,8 | 9651 | 0,85 | 2,4 | 72,0 | 5980 |
| 4.ZK 6500 La-6 | 1120 | 989 | 96,2 | 0,89 | 126 | 6,0 | 10809 | 0,85 | 2,4 | 94,0 | 6860 |
| 4.ZK 6500 Lb-6 | 1250 | 989 | 96,3 | 0,89 | 140 | 6,0 | 11968 | 0,85 | 2,4 | 104,0 | 7380 |
| 4.ZK 6500 Lc-6 | 1400 | 989 | 96,5 | 0,89 | 157 | 6,0 | 13498 | 0,85 | 2,4 | 116,0 | 8040 |

TRANSNORM HV MOTORS

10 Electrical data

6 kV; 50 Hz

| Type | Power P _n kW | Nominal speed n 1/min | Motor efficiency η % | Power factor $\cos\varphi$ | Nominal current I _n A | Start current I _s /I _N | Nominal torque T _n Nm | Start torque T ₀ /T _N | Maximum torque T _m /T _n | Momentum of inertia J kgm ² | Weight m kg |
|----------------|-------------------------------|--------------------------------|------------------------------------|----------------------------------|---|--|---|---|---|---|-------------------|
| 2p = 8 | | | | | | | | | | | |
| 5.ZK 6355 La-8 | 200 | 743 | 93,8 | 0,75 | 27 | 5,2 | 2570 | 0,70 | 2,1 | 11,0 | 2450 |
| 5.ZK 6355 Lb-8 | 250 | 743 | 94,0 | 0,75 | 34 | 5,2 | 3210 | 0,70 | 2,1 | 12,7 | 2660 |
| 5.ZK 6355 Lc-8 | 315 | 743 | 94,1 | 0,75 | 43 | 5,2 | 4045 | 0,70 | 2,1 | 15,1 | 2890 |
| 5.ZK 6400 La-8 | 355 | 743 | 94,9 | 0,77 | 47 | 5,3 | 4570 | 0,70 | 2,1 | 20,0 | 3400 |
| 5.ZK 6400 Lb-8 | 400 | 743 | 95,1 | 0,77 | 53 | 5,3 | 5144 | 0,70 | 2,1 | 24,4 | 3720 |
| 4.ZK 6450 La-8 | 560 | 744 | 95,4 | 0,77 | 73 | 5,3 | 7176 | 0,75 | 2,2 | 36,0 | 4740 |
| 4.ZK 6450 Lb-8 | 630 | 744 | 95,5 | 0,77 | 82 | 5,3 | 8074 | 0,75 | 2,2 | 41,0 | 5100 |
| 4.ZK 6450 Lc-8 | 710 | 744 | 95,9 | 0,77 | 93 | 5,3 | 9088 | 0,75 | 2,2 | 47,0 | 5580 |
| 4.ZK 6500 La-8 | 800 | 745 | 96,0 | 0,78 | 103 | 5,2 | 10240 | 0,70 | 2,2 | 66,0 | 6620 |
| 4.ZK 6500 Lb-8 | 900 | 744 | 96,1 | 0,78 | 116 | 5,2 | 11532 | 0,70 | 2,2 | 89,0 | 7200 |

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Electrical data 11

3,3 kV; 50 Hz

| Type | Power P _n kW | Nominal speed n 1/min | Motor efficiency η % | Power factor cosφ | Nominal current I _n A | Start current I _s /I _N | Nominal torque T _n Nm | Start torque T ₀ /T _N | Maximum torque T _m /T _n | Momentum of inertia J kgm ² | Weight m kg |
|----------------|-------------------------------|--------------------------------|-------------------------------|-------------------------|---|--|---|---|---|---|-------------------|
| 2p = 2 | | | | | | | | | | | |
| 5.ZK 3315 La-2 | 160 | 2967 | 94,5 | 0,88 | 34 | 6,1 | 515 | 0,80 | 2,4 | 2,3 | 1610 |
| 5.ZK 3315 Lb-2 | 180 | 2968 | 94,7 | 0,88 | 38 | 6,1 | 575 | 0,80 | 2,4 | 2,3 | 1630 |
| 5.ZK 3315 Lc-2 | 250 | 2969 | 94,8 | 0,88 | 52 | 6,1 | 800 | 0,80 | 2,4 | 2,5 | 1780 |
| 5.ZK 3315 Ld-2 | 315 | 2970 | 95,0 | 0,88 | 66 | 6,2 | 1010 | 0,80 | 2,4 | 2,8 | 1930 |
| 5.ZK 3315 Le-2 | 355 | 2973 | 95,1 | 0,88 | 74 | 6,2 | 1140 | 0,80 | 2,4 | 3,1 | 2110 |
| 5.ZK 3355 La-2 | 400 | 2975 | 95,3 | 0,88 | 83 | 6,3 | 1285 | 0,80 | 2,4 | 4,5 | 2420 |
| 5.ZK 3355 Lb-2 | 450 | 2977 | 95,6 | 0,89 | 93 | 6,4 | 1445 | 0,80 | 2,4 | 4,9 | 2560 |
| 5.ZK 3355 Lc-2 | 500 | 2977 | 95,8 | 0,89 | 103 | 6,4 | 1605 | 0,80 | 2,4 | 5,3 | 2700 |
| 5.ZK 3400 La-2 | 560 | 2977 | 95,9 | 0,89 | 115 | 6,4 | 1796 | 0,80 | 2,4 | 8,0 | 3260 |
| 5.ZK 3400 Lb-2 | 630 | 2977 | 96,0 | 0,89 | 129 | 6,5 | 2023 | 0,80 | 2,4 | 8,6 | 3380 |
| 5.ZK 3400 Lc-2 | 710 | 2977 | 96,2 | 0,89 | 145 | 6,5 | 2280 | 0,80 | 2,4 | 9,8 | 3560 |
| 4.ZK 3450 La-2 | 800 | 2977 | 96,2 | 0,89 | 163 | 6,5 | 2569 | 0,80 | 2,4 | 17,2 | 4680 |
| 4.ZK 3450 Lb-2 | 900 | 2977 | 96,3 | 0,89 | 184 | 6,5 | 2890 | 0,80 | 2,4 | 19,0 | 4930 |
| 4.ZK 3500 La-2 | 1000 | 2979 | 96,4 | 0,90 | 202 | 6,6 | 3200 | 0,80 | 2,4 | 27,0 | 5840 |
| 4.ZK 3500 Lb-2 | 1120 | 2979 | 96,5 | 0,90 | 226 | 6,6 | 3586 | 0,80 | 2,4 | 30,0 | 6100 |
| 4.ZK 3500 Lc-2 | 1250 | 2979 | 96,6 | 0,90 | 252 | 6,6 | 4002 | 0,80 | 2,4 | 34,0 | 6380 |
| 2p = 4 | | | | | | | | | | | |
| 5.ZK 3315 La-4 | 200 | 1480 | 93,9 | 0,86 | 43 | 6,0 | 1288 | 0,85 | 2,3 | 2,9 | 1580 |
| 5.ZK 3315 Lb-4 | 250 | 1480 | 94,4 | 0,86 | 54 | 6,0 | 1610 | 0,85 | 2,3 | 3,6 | 1730 |
| 5.ZK 3315 Lc-4 | 315 | 1481 | 94,7 | 0,86 | 68 | 6,0 | 2028 | 0,85 | 2,3 | 4,1 | 1950 |
| 5.ZK 3315 Ld-4 | 355 | 1482 | 95,1 | 0,86 | 76 | 6,0 | 2285 | 0,85 | 2,3 | 4,9 | 2100 |
| 5.ZK 3355 La-4 | 400 | 1484 | 95,1 | 0,87 | 85 | 6,0 | 2578 | 0,85 | 2,4 | 6,2 | 2400 |
| 5.ZK 3355 Lb-4 | 450 | 1484 | 95,3 | 0,87 | 95 | 6,0 | 2895 | 0,85 | 2,4 | 6,8 | 2530 |
| 5.ZK 3355 Lc-4 | 500 | 1484 | 95,4 | 0,87 | 105 | 6,0 | 3222 | 0,85 | 2,4 | 7,3 | 2670 |
| 5.ZK 3355 Ld-4 | 560 | 1484 | 95,6 | 0,86 | 119 | 6,0 | 3603 | 0,85 | 2,4 | 8,3 | 2830 |
| 5.ZK 3400 La-4 | 630 | 1486 | 95,5 | 0,86 | 134 | 6,1 | 4051 | 0,85 | 2,4 | 11,8 | 3580 |
| 5.ZK 3400 Lb-4 | 710 | 1486 | 95,6 | 0,87 | 149 | 6,2 | 4566 | 0,85 | 2,4 | 13,2 | 3750 |
| 5.ZK 3400 Lc-4 | 800 | 1486 | 95,9 | 0,87 | 168 | 6,2 | 5144 | 0,85 | 2,4 | 14,9 | 3980 |
| 4.ZK 3450 La-4 | 900 | 1486 | 96,0 | 0,88 | 186 | 6,3 | 5788 | 0,85 | 2,4 | 24,0 | 5100 |
| 4.ZK 3450 Lb-4 | 1000 | 1486 | 96,2 | 0,88 | 207 | 6,3 | 6431 | 0,85 | 2,4 | 27,2 | 5390 |
| 4.ZK 3450 Lc-4 | 1120 | 1488 | 96,4 | 0,88 | 231 | 6,3 | 7202 | 0,85 | 2,4 | 31,0 | 5690 |
| 4.ZK 3500 La-4 | 1250 | 1488 | 96,5 | 0,89 | 255 | 6,4 | 8038 | 0,85 | 2,3 | 37,0 | 6320 |
| 4.ZK 3500 Lb-4 | 1400 | 1488 | 96,6 | 0,89 | 285 | 6,5 | 8986 | 0,85 | 2,3 | 42,0 | 6800 |
| 4.ZK 3500 Lc-4 | 1600 | 1488 | 96,6 | 0,89 | 326 | 6,5 | 10270 | 0,85 | 2,3 | 50,0 | 7500 |
| 2p = 6 | | | | | | | | | | | |
| 5.ZK 3315 La-6 | 160 | 983 | 93,7 | 0,79 | 38 | 5,3 | 1554 | 0,75 | 2,1 | 4,5 | 1750 |
| 5.ZK 3315 Lb-6 | 180 | 984 | 93,8 | 0,80 | 42 | 5,4 | 1734 | 0,80 | 2,2 | 4,7 | 1843 |
| 5.ZK 3315 Lc-6 | 200 | 984 | 94,0 | 0,80 | 47 | 5,4 | 1942 | 0,80 | 2,2 | 5,1 | 1913 |
| 5.ZK 3315 Ld-6 | 250 | 985 | 94,1 | 0,80 | 58 | 5,4 | 2427 | 0,80 | 2,2 | 6,1 | 2125 |
| 5.ZK 3315 Le-6 | 315 | 987 | 94,7 | 0,84 | 69 | 5,4 | 3058 | 0,80 | 2,2 | 7,7 | 2366 |
| 5.ZK 3355 La-6 | 355 | 987 | 94,8 | 0,84 | 78 | 5,4 | 3447 | 0,80 | 2,3 | 12,6 | 2618 |
| 5.ZK 3355 Lb-6 | 400 | 987 | 94,9 | 0,84 | 88 | 5,4 | 3884 | 0,80 | 2,3 | 14,8 | 2880 |
| 5.ZK 3355 Lc-6 | 450 | 987 | 95,1 | 0,84 | 99 | 5,4 | 4354 | 0,80 | 2,3 | 17,1 | 2990 |
| 5.ZK 3400 La-6 | 500 | 987 | 95,2 | 0,84 | 109 | 5,6 | 4835 | 0,80 | 2,3 | 22,0 | 3575 |
| 5.ZK 3400 Lb-6 | 560 | 988 | 95,3 | 0,84 | 122 | 5,6 | 5412 | 0,80 | 2,3 | 24,3 | 3786 |
| 5.ZK 3400 Lc-6 | 630 | 988 | 95,4 | 0,84 | 138 | 5,6 | 6092 | 0,80 | 2,3 | 27,5 | 4028 |
| 4.ZK 3450 La-6 | 800 | 989 | 95,7 | 0,84 | 174 | 5,8 | 7721 | 0,85 | 2,4 | 42,0 | 5267 |
| 4.ZK 3450 Lb-6 | 900 | 989 | 95,9 | 0,84 | 195 | 5,8 | 8686 | 0,85 | 2,4 | 56,0 | 5639 |
| 4.ZK 3450 Lc-6 | 1000 | 989 | 96,1 | 0,84 | 217 | 5,8 | 9651 | 0,85 | 2,4 | 72,0 | 6022 |
| 4.ZK 3500 La-6 | 1120 | 989 | 96,2 | 0,89 | 229 | 6,0 | 10809 | 0,85 | 2,4 | 94,0 | 6908 |
| 4.ZK 3500 Lb-6 | 1250 | 989 | 96,3 | 0,89 | 255 | 6,0 | 11968 | 0,85 | 2,4 | 104,0 | 7432 |
| 4.ZK 3500 Lc-6 | 1400 | 989 | 96,5 | 0,89 | 285 | 6,0 | 13498 | 0,85 | 2,4 | 116,0 | 8096 |

TRANSNORM HV MOTORS

12 Electrical data

3,3 kV; 50 Hz

| Type | Power P _n kW | Nominal speed n 1/min | Motor efficiency η % | Power factor $\cos\varphi$ | Nominal current I _n A | Start current I _s /I _N | Nominal torque T _n Nm | Start torque T ₀ /T _N | Maximum torque T _m /T _n | Momentum of inertia J kgm ² | Weight m kg |
|----------------|-------------------------------|--------------------------------|------------------------------------|----------------------------------|---|--|---|---|---|---|-------------------|
| 2p = 8 | | | | | | | | | | | |
| 5.ZK 3355 La-8 | 200 | 743 | 93,9 | 0,74 | 50 | 5,2 | 2570 | 0,70 | 2,1 | 11,0 | 2470 |
| 5.ZK 3355 Lb-8 | 250 | 743 | 94,1 | 0,74 | 63 | 5,2 | 3210 | 0,70 | 2,1 | 12,7 | 2680 |
| 5.ZK 3355 Lc-8 | 315 | 743 | 94,2 | 0,74 | 79 | 5,2 | 4045 | 0,70 | 2,1 | 15,1 | 2910 |
| 5.ZK 3400 La-8 | 355 | 743 | 95,0 | 0,75 | 87 | 5,3 | 4570 | 0,70 | 2,1 | 20,0 | 3420 |
| 5.ZK 3400 Lb-8 | 400 | 743 | 95,2 | 0,75 | 98 | 5,3 | 5144 | 0,70 | 2,1 | 24,4 | 3750 |
| 4.ZK 3450 La-8 | 560 | 744 | 95,5 | 0,76 | 135 | 5,3 | 7176 | 0,75 | 2,2 | 36,0 | 4770 |
| 4.ZK 3450 Lb-8 | 630 | 744 | 95,6 | 0,76 | 152 | 5,3 | 8074 | 0,75 | 2,2 | 41,0 | 5130 |
| 4.ZK 3450 Lc-8 | 710 | 744 | 96,0 | 0,76 | 170 | 5,3 | 9088 | 0,75 | 2,2 | 47,0 | 5620 |
| 4.ZK 3500 La-8 | 800 | 745 | 96,1 | 0,77 | 189 | 5,2 | 10240 | 0,70 | 2,2 | 66,0 | 6700 |
| 4.ZK 3500 Lb-8 | 900 | 744 | 96,2 | 0,77 | 213 | 5,2 | 11532 | 0,70 | 2,2 | 89,0 | 7250 |

TRANSNORM HV MOTORS

Electrical data 13

10 kV; 50 Hz

| Type | Power P _n kW | Nominal speed n 1/min | Motor efficiency η % | Power factor cosφ | Nominal current I _n A | Start current I _l /I _N | Nominal torque T _n Nm | Start torque T ₀ /T _N | Maximum torque T _m /T _n | Momentum of inertia J kgm ² | Weight m kg |
|-----------------|-------------------------------|--------------------------------|-------------------------------|-------------------------|---|--|---|---|---|---|-------------------|
| 2p = 2 | | | | | | | | | | | |
| 5.ZK 10400 La-2 | 315 | 2970 | 94,8 | 0,87 | 22 | 6,3 | 1007 | 0,80 | 2,3 | 4,2 | 2980 |
| 5.ZK 10400 Lb-2 | 400 | 2970 | 95,3 | 0,87 | 28 | 6,3 | 1440 | 0,80 | 2,3 | 5,6 | 3300 |
| 5.ZK 10400 Lc-2 | 500 | 2974 | 95,4 | 0,87 | 35 | 6,3 | 1600 | 0,80 | 2,3 | 7,5 | 3520 |
| 4.ZK 10450 La-2 | 560 | 2975 | 95,6 | 0,88 | 38 | 6,3 | 1797 | 0,80 | 2,4 | 12,4 | 4290 |
| 4.ZK 10450 Lb-2 | 630 | 2975 | 95,7 | 0,88 | 43 | 6,3 | 2013 | 0,80 | 2,4 | 15,2 | 4480 |
| 4.ZK 10450 Lc-2 | 710 | 2973 | 95,9 | 0,88 | 49 | 6,3 | 2269 | 0,80 | 2,4 | 17,2 | 4690 |
| 4.ZK 10450 Ld-2 | 800 | 2978 | 96,1 | 0,88 | 55 | 6,3 | 2557 | 0,80 | 2,4 | 19,1 | 4920 |
| 4.ZK 10500 La-2 | 900 | 2979 | 96,2 | 0,89 | 61 | 6,0 | 2872 | 0,80 | 2,4 | 27,0 | 5700 |
| 4.ZK 10500 Lb-2 | 1000 | 2979 | 96,3 | 0,89 | 67 | 6,0 | 3192 | 0,80 | 2,4 | 33,0 | 6000 |
| 4.ZK 10500 Lc-2 | 1120 | 2978 | 96,5 | 0,89 | 75 | 6,0 | 3575 | 0,80 | 2,4 | 39,0 | 6300 |
| 2p = 4 | | | | | | | | | | | |
| 5.ZK 10400 La-4 | 400 | 1482 | 94,9 | 0,85 | 29 | 6,0 | 2562 | 0,85 | 2,4 | 8,9 | 3380 |
| 5.ZK 10400 Lb-4 | 500 | 1482 | 95,2 | 0,85 | 36 | 6,0 | 3221 | 0,85 | 2,4 | 11,2 | 3640 |
| 5.ZK 10400 Lc-4 | 560 | 1483 | 95,3 | 0,85 | 40 | 6,0 | 3606 | 0,85 | 2,4 | 15,0 | 3760 |
| 5.ZK 10400 Ld-4 | 630 | 1483 | 95,4 | 0,86 | 44 | 6,0 | 4038 | 0,85 | 2,4 | 19,0 | 4090 |
| 4.ZK 10450 La-4 | 800 | 1484 | 95,7 | 0,86 | 56 | 6,1 | 5117 | 0,85 | 2,4 | 24,4 | 5100 |
| 4.ZK 10450 Lb-4 | 900 | 1484 | 95,8 | 0,87 | 62 | 6,1 | 5756 | 0,85 | 2,4 | 30,0 | 5400 |
| 4.ZK 10450 Lc-4 | 1000 | 1486 | 96,0 | 0,87 | 69 | 6,0 | 6396 | 0,85 | 2,4 | 33,1 | 5800 |
| 4.ZK 10500 La-4 | 1120 | 1486 | 96,1 | 0,88 | 76 | 5,9 | 7154 | 0,85 | 2,4 | 37,3 | 6400 |
| 4.ZK 10500 Lb-4 | 1320 | 1484 | 96,2 | 0,88 | 90 | 5,9 | 8431 | 0,85 | 2,4 | 43,5 | 6980 |
| 4.ZK 10500 Lc-4 | 1400 | 1484 | 96,4 | 0,88 | 95 | 5,9 | 8942 | 0,85 | 2,4 | 49,0 | 7270 |
| 2p = 6 | | | | | | | | | | | |
| 5.ZK 10400 La-6 | 315 | 987 | 95,2 | 0,83 | 23 | 5,6 | 3026 | 0,80 | 2,3 | 15,0 | 3440 |
| 5.ZK 10400 Lb-6 | 400 | 987 | 95,3 | 0,83 | 29 | 5,6 | 3843 | 0,80 | 2,3 | 18,4 | 3610 |
| 5.ZK 10400 Lc-6 | 450 | 988 | 95,4 | 0,83 | 33 | 5,6 | 4323 | 0,80 | 2,3 | 23,2 | 3800 |
| 5.ZK 10400 Ld-6 | 500 | 989 | 95,1 | 0,84 | 36 | 5,7 | 4828 | 0,84 | 2,4 | 25,1 | 3970 |
| 4.ZK 10450 La-6 | 560 | 989 | 95,2 | 0,84 | 40 | 5,8 | 5407 | 0,85 | 2,4 | 34,7 | 4860 |
| 4.ZK 10450 Lb-6 | 630 | 989 | 95,3 | 0,84 | 45 | 5,8 | 6040 | 0,85 | 2,4 | 42,0 | 5370 |
| 4.ZK 10450 Lc-6 | 710 | 989 | 95,8 | 0,84 | 51 | 5,8 | 6807 | 0,85 | 2,4 | 59,2 | 5900 |
| 4.ZK 10450 Ld-6 | 800 | 989 | 96,0 | 0,85 | 57 | 5,8 | 7670 | 0,85 | 2,4 | 80,0 | 6450 |
| 4.ZK 10500 La-6 | 1000 | 989 | 96,2 | 0,86 | 70 | 6,0 | 9588 | 0,85 | 2,4 | 93,2 | 7060 |
| 4.ZK 10500 Lb-6 | 1120 | 989 | 96,3 | 0,86 | 78 | 6,0 | 10738 | 0,85 | 2,4 | 103,6 | 7480 |
| 4.ZK 10500 Lc-6 | 1250 | 989 | 96,5 | 0,86 | 87 | 6,0 | 11984 | 0,85 | 2,4 | 117,0 | 7850 |
| 2p = 8 | | | | | | | | | | | |
| 5.ZK 10400 La-8 | 280 | 743 | 94,6 | 0,76 | 22 | 5,4 | 3599 | 0,70 | 2,1 | 14,2 | 3370 |
| 5.ZK 10400 Lb-8 | 315 | 743 | 94,4 | 0,77 | 25 | 5,4 | 4043 | 0,70 | 2,1 | 16,4 | 3580 |
| 5.ZK 10400 Lc-8 | 355 | 743 | 94,5 | 0,77 | 28 | 5,4 | 4556 | 0,70 | 2,1 | 20,0 | 3780 |
| 4.ZK 10450 La-8 | 400 | 744 | 94,6 | 0,77 | 32 | 5,4 | 5141 | 0,75 | 2,2 | 32,0 | 4640 |
| 4.ZK 10450 La-8 | 500 | 744 | 94,9 | 0,78 | 39 | 5,4 | 6400 | 0,75 | 2,2 | 39,2 | 5000 |
| 4.ZK 10450 Lb-8 | 560 | 744 | 95,1 | 0,78 | 44 | 5,4 | 7168 | 0,75 | 2,2 | 43,1 | 5300 |
| 4.ZK 10450 Lc-8 | 630 | 744 | 95,5 | 0,78 | 49 | 5,4 | 8075 | 0,75 | 2,2 | 48,5 | 5640 |
| 4.ZK 10500 La-8 | 710 | 745 | 95,7 | 0,79 | 54 | 5,3 | 9088 | 0,75 | 2,2 | 83,0 | 6670 |
| 4.ZK 10500 Lb-8 | 800 | 745 | 95,9 | 0,79 | 61 | 5,3 | 10241 | 0,75 | 2,2 | 102,8 | 7120 |
| 4.ZK 10500 Lc-8 | 900 | 745 | 96,0 | 0,80 | 68 | 5,3 | 11521 | 0,75 | 2,2 | 122,0 | 7590 |

TRANSNORM HV MOTORS

14 Electrical data

Converter fed operation

Constant torque speed range 1:2

3,3 kV; 50 Hz

| Type | Power P _n kW | Nominal speed n 1/min | Motor efficiency η % | Power factor cosφ | Nominal current I _n A | Start current I _s /I _N | Nominal torque T _n Nm | Start torque T ₀ /T _N | Maximum torque T _m /T _N |
|-----------------|-------------------------------|--------------------------------|-------------------------------|-------------------------|---|--|---|---|---|
| 2p = 2 | | | | | | | | | |
| 5.RZK 3315 La-2 | 144 | 2967 | 94,2 | 0,88 | 31 | 6,1 | 515 | 0,80 | 2,4 |
| 5.RZK 3315 Lb-2 | 162 | 2968 | 94,3 | 0,88 | 34 | 6,1 | 575 | 0,80 | 2,4 |
| 5.RZK 3315 Lc-2 | 225 | 2969 | 94,5 | 0,88 | 47 | 6,1 | 800 | 0,80 | 2,4 |
| 5.RZK 3315 Ld-2 | 284 | 2970 | 94,8 | 0,88 | 59 | 6,2 | 1010 | 0,80 | 2,4 |
| 5.RZK 3315 Le-2 | 320 | 2973 | 95,1 | 0,88 | 67 | 6,2 | 1140 | 0,80 | 2,4 |
| 5.RZK 3355 La-2 | 360 | 2975 | 95,1 | 0,89 | 74 | 6,3 | 1285 | 0,80 | 2,4 |
| 5.RZK 3355 Lb-2 | 405 | 2977 | 95,3 | 0,90 | 83 | 6,4 | 1445 | 0,80 | 2,4 |
| 5.RZK 3355 Lc-2 | 450 | 2977 | 95,3 | 0,90 | 92 | 6,4 | 1605 | 0,80 | 2,4 |
| 5.RZK 3400 La-2 | 504 | 2977 | 95,4 | 0,90 | 103 | 6,4 | 1796 | 0,80 | 2,4 |
| 5.RZK 3400 Lb-2 | 567 | 2977 | 95,5 | 0,90 | 115 | 6,5 | 2023 | 0,80 | 2,4 |
| 5.RZK 3400 Lc-2 | 639 | 2977 | 95,6 | 0,90 | 130 | 6,5 | 2280 | 0,80 | 2,4 |
| 4.RZK 3450 La-2 | 720 | 2977 | 95,9 | 0,91 | 144 | 6,5 | 2569 | 0,80 | 2,4 |
| 4.RZK 3450 Lb-2 | 810 | 2977 | 96,1 | 0,91 | 162 | 6,5 | 2890 | 0,80 | 2,4 |
| 4.RZK 3500 La-2 | 900 | 2979 | 96,2 | 0,91 | 180 | 6,6 | 3200 | 0,80 | 2,4 |
| 4.RZK 3500 Lb-2 | 1008 | 2979 | 96,3 | 0,91 | 201 | 6,6 | 3586 | 0,80 | 2,4 |
| 4.RZK 3500 Lc-2 | 1125 | 2979 | 96,5 | 0,91 | 224 | 6,6 | 4002 | 0,80 | 2,4 |
| 2p = 4 | | | | | | | | | |
| 5.RZK 3315 La-4 | 180 | 1480 | 94,5 | 0,86 | 39 | 6,0 | 1288 | 0,85 | 2,3 |
| 5.RZK 3315 Lb-4 | 225 | 1480 | 94,8 | 0,86 | 48 | 6,0 | 1610 | 0,85 | 2,3 |
| 5.RZK 3315 Lc-4 | 284 | 1481 | 95,0 | 0,86 | 61 | 6,0 | 2028 | 0,85 | 2,3 |
| 5.RZK 3315 Ld-4 | 320 | 1482 | 95,2 | 0,86 | 68 | 6,0 | 2285 | 0,85 | 2,3 |
| 5.RZK 3355 La-4 | 360 | 1484 | 95,4 | 0,86 | 77 | 6,0 | 2578 | 0,85 | 2,4 |
| 5.RZK 3355 Lb-4 | 450 | 1484 | 95,6 | 0,86 | 96 | 6,0 | 3222 | 0,85 | 2,4 |
| 5.RZK 3355 Lc-4 | 504 | 1484 | 95,8 | 0,86 | 107 | 6,0 | 3603 | 0,85 | 2,4 |
| 5.RZK 3400 La-4 | 567 | 1486 | 96,0 | 0,87 | 119 | 6,1 | 4051 | 0,85 | 2,4 |
| 5.RZK 3400 Lb-4 | 639 | 1486 | 96,3 | 0,87 | 133 | 6,2 | 4566 | 0,85 | 2,4 |
| 5.RZK 3400 Lc-4 | 720 | 1486 | 96,5 | 0,87 | 150 | 6,2 | 5144 | 0,85 | 2,4 |
| 4.RZK 3450 La-4 | 810 | 1486 | 96,7 | 0,89 | 165 | 6,3 | 5788 | 0,85 | 2,4 |
| 4.RZK 3450 Lb-4 | 900 | 1486 | 96,8 | 0,89 | 183 | 6,3 | 6431 | 0,85 | 2,4 |
| 4.RZK 3450 Lc-4 | 1008 | 1488 | 96,8 | 0,89 | 205 | 6,3 | 7202 | 0,85 | 2,4 |
| 4.RZK 3500 La-4 | 1125 | 1488 | 97,0 | 0,90 | 225 | 6,4 | 8038 | 0,85 | 2,3 |
| 4.RZK 3500 Lb-4 | 1260 | 1488 | 97,1 | 0,90 | 252 | 6,5 | 8986 | 0,85 | 2,3 |
| 4.RZK 3500 Lc-4 | 1440 | 1488 | 97,2 | 0,90 | 288 | 6,5 | 10270 | 0,85 | 2,3 |
| 2p = 6 | | | | | | | | | |
| 5.RZK 3315 La-6 | 162 | 984 | 93,7 | 0,81 | 37 | 5,4 | 1734 | 0,80 | 2,2 |
| 5.RZK 3315 Lb-6 | 180 | 984 | 93,9 | 0,81 | 41 | 5,4 | 1942 | 0,80 | 2,2 |
| 5.RZK 3315 Lc-6 | 225 | 985 | 94,1 | 0,81 | 52 | 5,4 | 2427 | 0,80 | 2,2 |
| 5.RZK 3315 Ld-6 | 284 | 987 | 94,6 | 0,83 | 63 | 5,4 | 3058 | 0,80 | 2,2 |
| 5.RZK 3355 La-6 | 320 | 987 | 94,8 | 0,83 | 71 | 5,4 | 3447 | 0,80 | 2,3 |
| 5.RZK 3355 Lb-6 | 360 | 987 | 94,9 | 0,83 | 80 | 5,4 | 3884 | 0,80 | 2,3 |
| 5.RZK 3400 La-6 | 450 | 987 | 95,3 | 0,84 | 98 | 5,6 | 4835 | 0,80 | 2,3 |
| 5.RZK 3400 Lb-6 | 504 | 988 | 95,3 | 0,84 | 110 | 5,6 | 5412 | 0,80 | 2,3 |
| 5.RZK 3400 Lc-6 | 567 | 988 | 95,4 | 0,84 | 124 | 5,6 | 6092 | 0,80 | 2,3 |
| 4.RZK 3450 La-6 | 720 | 989 | 95,7 | 0,84 | 157 | 5,8 | 7721 | 0,85 | 2,4 |
| 4.RZK 3450 Lb-6 | 810 | 989 | 95,9 | 0,84 | 176 | 5,8 | 8686 | 0,85 | 2,4 |
| 4.RZK 3450 Lc-6 | 900 | 989 | 96,1 | 0,84 | 195 | 5,8 | 9651 | 0,85 | 2,4 |
| 4.RZK 3500 La-6 | 1008 | 989 | 96,2 | 0,89 | 206 | 6,0 | 10809 | 0,85 | 2,4 |
| 4.RZK 3500 Lb-6 | 1125 | 989 | 96,4 | 0,89 | 229 | 6,0 | 11968 | 0,85 | 2,4 |
| 4.RZK 3500 Lc-6 | 1260 | 989 | 96,6 | 0,89 | 256 | 6,0 | 13498 | 0,85 | 2,4 |

TRANSNORM HV MOTORS

Electrical data 15

Converter fed operation

Constant torque speed range 1:2

3,3 kV; 50 Hz

| Type | Power P _n kW | Nominal speed n 1/min | Motor efficiency η % | Power factor $\cos\phi$ | Nominal current I _n A | Start current I _s /I _N | Nominal torque T _n Nm | Start torque T ₀ /T _N | Maximum torque T _m /T _n |
|-----------------|-------------------------------|--------------------------------|------------------------------------|-------------------------------|---|--|---|---|---|
| 2p = 8 | | | | | | | | | |
| 5.RZK 3355 La-8 | 180 | 743 | 94,4 | 0,75 | 44 | 5,2 | 2570 | 0,70 | 2,1 |
| 5.RZK 3355 Lb-8 | 225 | 743 | 94,7 | 0,75 | 55 | 5,2 | 3210 | 0,70 | 2,1 |
| 5.RZK 3355 Lc-8 | 284 | 743 | 94,9 | 0,75 | 70 | 5,2 | 4045 | 0,70 | 2,1 |
| 5.RZK 3400 La-8 | 320 | 743 | 95,1 | 0,76 | 77 | 5,3 | 4570 | 0,70 | 2,1 |
| 5.RZK 3400 Lb-8 | 360 | 743 | 95,3 | 0,76 | 87 | 5,3 | 5144 | 0,70 | 2,1 |
| 4.RZK 3450 La-8 | 504 | 744 | 95,5 | 0,76 | 121 | 5,3 | 7176 | 0,75 | 2,2 |
| 4.RZK 3450 Lb-8 | 567 | 744 | 95,8 | 0,76 | 136 | 5,3 | 8074 | 0,75 | 2,2 |
| 4.RZK 3450 Lc-8 | 639 | 744 | 95,8 | 0,76 | 154 | 5,3 | 9088 | 0,75 | 2,2 |
| 4.RZK 3500 La-8 | 720 | 745 | 96,0 | 0,77 | 170 | 5,2 | 10240 | 0,70 | 2,2 |
| 4.RZK 3500 Lb-8 | 810 | 744 | 96,1 | 0,77 | 192 | 5,2 | 11532 | 0,70 | 2,2 |

TRANSNORM HV MOTORS

16 Electrical data

Converter fed operation

Constant torque speed range 1:5

3,3 kV; 50 Hz

| Type | Power P _n kW | Nominal speed n 1/min | Motor efficiency η % | Power factor $\cos\varphi$ | Nominal current I _n A | Start current I _I /I _N | Nominal torque T _n Nm | Start torque T ₀ /T _N | Maximum torque T _m /T _N |
|-----------------|-------------------------------|--------------------------------|------------------------------------|----------------------------------|---|--|---|---|---|
| 2p = 2 | | | | | | | | | |
| 5.RZK 3315 La-2 | 132 | 2967 | 94,2 | 0,88 | 28 | 6,1 | 515 | 0,80 | 2,4 |
| 5.RZK 3315 Lb-2 | 148 | 2968 | 94,3 | 0,88 | 31 | 6,1 | 575 | 0,80 | 2,4 |
| 5.RZK 3315 Lc-2 | 205 | 2969 | 94,5 | 0,88 | 43 | 6,1 | 800 | 0,80 | 2,4 |
| 5.RZK 3315 Ld-2 | 258 | 2970 | 94,8 | 0,88 | 54 | 6,2 | 1010 | 0,80 | 2,4 |
| 5.RZK 3315 Le-2 | 291 | 2973 | 95,1 | 0,88 | 61 | 6,2 | 1140 | 0,80 | 2,4 |
| 5.RZK 3355 La-2 | 328 | 2975 | 95,1 | 0,89 | 68 | 6,3 | 1285 | 0,80 | 2,4 |
| 5.RZK 3355 Lb-2 | 369 | 2977 | 95,3 | 0,90 | 75 | 6,4 | 1445 | 0,80 | 2,4 |
| 5.RZK 3355 Lc-2 | 410 | 2977 | 95,3 | 0,90 | 84 | 6,4 | 1605 | 0,80 | 2,4 |
| 5.RZK 3400 La-2 | 460 | 2977 | 95,4 | 0,90 | 94 | 6,4 | 1796 | 0,80 | 2,4 |
| 5.RZK 3400 Lb-2 | 517 | 2977 | 95,5 | 0,90 | 105 | 6,5 | 2023 | 0,80 | 2,4 |
| 5.RZK 3400 Lc-2 | 582 | 2977 | 95,6 | 0,90 | 118 | 6,5 | 2280 | 0,80 | 2,4 |
| 4.RZK 3450 La-2 | 656 | 2977 | 95,9 | 0,91 | 132 | 6,5 | 2569 | 0,80 | 2,4 |
| 4.RZK 3450 Lb-2 | 738 | 2977 | 96,1 | 0,91 | 148 | 6,5 | 2890 | 0,80 | 2,4 |
| 4.RZK 3500 La-2 | 820 | 2979 | 96,2 | 0,91 | 164 | 6,6 | 3200 | 0,80 | 2,4 |
| 4.RZK 3500 Lb-2 | 918 | 2979 | 96,3 | 0,91 | 183 | 6,6 | 3586 | 0,80 | 2,4 |
| 4.RZK 3500 Lc-2 | 1025 | 2979 | 96,5 | 0,91 | 204 | 6,6 | 4002 | 0,80 | 2,4 |
| 2p = 4 | | | | | | | | | |
| 5.RZK 3315 La-4 | 164 | 1480 | 94,5 | 0,86 | 35 | 6,0 | 1288 | 0,85 | 2,3 |
| 5.RZK 3315 Lb-4 | 205 | 1480 | 94,8 | 0,86 | 44 | 6,0 | 1610 | 0,85 | 2,3 |
| 5.RZK 3315 Lc-4 | 258 | 1481 | 95,0 | 0,86 | 55 | 6,0 | 2028 | 0,85 | 2,3 |
| 5.RZK 3315 Ld-4 | 291 | 1482 | 95,2 | 0,86 | 62 | 6,0 | 2285 | 0,85 | 2,3 |
| 5.RZK 3355 La-4 | 328 | 1484 | 95,4 | 0,86 | 70 | 6,0 | 2578 | 0,85 | 2,4 |
| 5.RZK 3355 Lb-4 | 410 | 1484 | 95,6 | 0,86 | 87 | 6,0 | 3222 | 0,85 | 2,4 |
| 5.RZK 3355 Lc-4 | 460 | 1484 | 95,8 | 0,86 | 98 | 6,0 | 3603 | 0,85 | 2,4 |
| 5.RZK 3400 La-4 | 517 | 1486 | 96,0 | 0,87 | 108 | 6,1 | 4051 | 0,85 | 2,4 |
| 5.RZK 3400 Lb-4 | 582 | 1486 | 96,3 | 0,87 | 122 | 6,2 | 4566 | 0,85 | 2,4 |
| 5.RZK 3400 Lc-4 | 656 | 1486 | 96,5 | 0,87 | 137 | 6,2 | 5144 | 0,85 | 2,4 |
| 4.RZK 3450 La-4 | 738 | 1486 | 96,7 | 0,89 | 150 | 6,3 | 5788 | 0,85 | 2,4 |
| 4.RZK 3450 Lb-4 | 820 | 1486 | 96,8 | 0,89 | 167 | 6,3 | 6431 | 0,85 | 2,4 |
| 4.RZK 3450 Lc-4 | 918 | 1488 | 96,8 | 0,89 | 187 | 6,3 | 7202 | 0,85 | 2,4 |
| 4.RZK 3500 La-4 | 1025 | 1488 | 97,0 | 0,90 | 205 | 6,4 | 8038 | 0,85 | 2,3 |
| 4.RZK 3500 Lb-4 | 1148 | 1488 | 97,1 | 0,90 | 230 | 6,5 | 8986 | 0,85 | 2,3 |
| 4.RZK 3500 Lc-4 | 1312 | 1488 | 97,2 | 0,90 | 262 | 6,5 | 10270 | 0,85 | 2,3 |
| 2p = 6 | | | | | | | | | |
| 5.RZK 3315 La-6 | 148 | 984 | 93,7 | 0,81 | 34 | 5,4 | 1734 | 0,80 | 2,2 |
| 5.RZK 3315 Lb-6 | 164 | 984 | 93,9 | 0,81 | 38 | 5,4 | 1942 | 0,80 | 2,2 |
| 5.RZK 3315 Lc-6 | 205 | 985 | 94,1 | 0,81 | 47 | 5,4 | 2427 | 0,80 | 2,2 |
| 5.RZK 3315 Ld-6 | 258 | 987 | 94,6 | 0,83 | 58 | 5,4 | 3058 | 0,80 | 2,2 |
| 5.RZK 3355 La-6 | 291 | 987 | 94,8 | 0,83 | 65 | 5,4 | 3447 | 0,80 | 2,3 |
| 5.RZK 3355 Lb-6 | 328 | 987 | 94,9 | 0,83 | 73 | 5,4 | 3884 | 0,80 | 2,3 |
| 5.RZK 3400 La-6 | 410 | 987 | 95,3 | 0,84 | 90 | 5,6 | 4835 | 0,80 | 2,3 |
| 5.RZK 3400 Lb-6 | 460 | 988 | 95,3 | 0,84 | 100 | 5,6 | 5412 | 0,80 | 2,3 |
| 5.RZK 3400 Lc-6 | 517 | 988 | 95,4 | 0,84 | 113 | 5,6 | 6092 | 0,80 | 2,3 |
| 4.RZK 3450 La-6 | 656 | 989 | 95,7 | 0,84 | 143 | 5,8 | 7721 | 0,85 | 2,4 |
| 4.RZK 3450 Lb-6 | 738 | 989 | 95,9 | 0,84 | 160 | 5,8 | 8686 | 0,85 | 2,4 |
| 4.RZK 3450 Lc-6 | 820 | 989 | 96,1 | 0,84 | 178 | 5,8 | 9651 | 0,85 | 2,4 |
| 4.RZK 3500 La-6 | 918 | 989 | 96,2 | 0,89 | 188 | 6,0 | 10809 | 0,85 | 2,4 |
| 4.RZK 3500 Lb-6 | 1025 | 989 | 96,4 | 0,89 | 209 | 6,0 | 11968 | 0,85 | 2,4 |
| 4.RZK 3500 Lc-6 | 1148 | 989 | 96,6 | 0,89 | 234 | 6,0 | 13498 | 0,85 | 2,4 |

TRANSNORM HV MOTORS

Electrical data 17

Converter fed operation

Constant torque speed range 1:5

3,3 kV; 50 Hz

| Type | Power P _n kW | Nominal speed n 1/min | Motor efficiency η % | Power factor $\cos\phi$ | Nominal current I _n A | Start current I _s /I _N | Nominal torque T _n Nm | Start torque T ₀ /T _N | Maximum torque T _m /T _n |
|-----------------|-------------------------------|--------------------------------|------------------------------------|-------------------------------|---|--|---|---|---|
| 2p = 8 | | | | | | | | | |
| 5.RZK 3355 La-8 | 164 | 743 | 94,4 | 0,75 | 41 | 5,2 | 2570 | 0,70 | 2,1 |
| 5.RZK 3355 Lb-8 | 205 | 743 | 94,7 | 0,75 | 50 | 5,2 | 3210 | 0,70 | 2,1 |
| 5.RZK 3355 Lc-8 | 258 | 743 | 94,9 | 0,75 | 63 | 5,2 | 4045 | 0,70 | 2,1 |
| 5.RZK 3400 La-8 | 291 | 743 | 95,1 | 0,76 | 70 | 5,3 | 4570 | 0,70 | 2,1 |
| 5.RZK 3400 Lb-8 | 328 | 743 | 95,3 | 0,76 | 79 | 5,3 | 5144 | 0,70 | 2,1 |
| 4.RZK 3450 La-8 | 459 | 744 | 95,5 | 0,76 | 111 | 5,3 | 7176 | 0,75 | 2,2 |
| 4.RZK 3450 Lb-8 | 517 | 744 | 95,8 | 0,76 | 124 | 5,3 | 8074 | 0,75 | 2,2 |
| 4.RZK 3450 Lc-8 | 582 | 744 | 95,8 | 0,76 | 140 | 5,3 | 9088 | 0,75 | 2,2 |
| 4.RZK 3500 La-8 | 656 | 745 | 96,0 | 0,77 | 155 | 5,2 | 10240 | 0,70 | 2,2 |
| 4.RZK 3500 Lb-8 | 738 | 744 | 96,1 | 0,77 | 174 | 5,2 | 11532 | 0,70 | 2,2 |

TRANSNORM HV MOTORS

18 Electrical data

Converter fed operation

Constant torque speed range 1:10

3,3 kV; 50 Hz

| Type | Power P _n kW | Nominal speed n 1/min | Motor efficiency η % | Power factor $\cos\varphi$ | Nominal current I _n A | Start current I _I /I _N | Nominal torque T _n Nm | Start torque T ₀ /T _N | Maximum torque T _m /T _N |
|-----------------|-------------------------------|--------------------------------|------------------------------------|----------------------------------|---|--|---|---|---|
| 2p = 2 | | | | | | | | | |
| 5.RZK 3315 La-2 | 118 | 2967 | 94,2 | 0,88 | 25 | 6,1 | 515 | 0,80 | 2,4 |
| 5.RZK 3315 Lb-2 | 135 | 2968 | 94,3 | 0,88 | 28 | 6,1 | 575 | 0,80 | 2,4 |
| 5.RZK 3315 Lc-2 | 188 | 2969 | 94,5 | 0,88 | 39 | 6,1 | 800 | 0,80 | 2,4 |
| 5.RZK 3315 Ld-2 | 236 | 2970 | 94,8 | 0,88 | 50 | 6,2 | 1010 | 0,80 | 2,4 |
| 5.RZK 3315 Le-2 | 266 | 2973 | 95,1 | 0,88 | 56 | 6,2 | 1140 | 0,80 | 2,4 |
| 5.RZK 3355 La-2 | 300 | 2975 | 95,1 | 0,89 | 62 | 6,3 | 1285 | 0,80 | 2,4 |
| 5.RZK 3355 Lb-2 | 338 | 2977 | 95,3 | 0,90 | 69 | 6,4 | 1445 | 0,80 | 2,4 |
| 5.RZK 3355 Lc-2 | 375 | 2977 | 95,3 | 0,90 | 76 | 6,4 | 1605 | 0,80 | 2,4 |
| 5.RZK 3400 La-2 | 460 | 2977 | 95,4 | 0,90 | 85 | 6,4 | 1796 | 0,80 | 2,4 |
| 5.RZK 3400 Lb-2 | 473 | 2977 | 95,5 | 0,90 | 96 | 6,5 | 2023 | 0,80 | 2,4 |
| 5.RZK 3400 Lc-2 | 533 | 2977 | 95,6 | 0,90 | 108 | 6,5 | 2280 | 0,80 | 2,4 |
| 4.RZK 3450 La-2 | 600 | 2977 | 95,9 | 0,91 | 120 | 6,5 | 2569 | 0,80 | 2,4 |
| 4.RZK 3450 Lb-2 | 675 | 2977 | 96,1 | 0,91 | 135 | 6,5 | 2890 | 0,80 | 2,4 |
| 4.RZK 3500 La-2 | 750 | 2979 | 96,2 | 0,91 | 150 | 6,6 | 3200 | 0,80 | 2,4 |
| 4.RZK 3500 Lb-2 | 840 | 2979 | 96,3 | 0,91 | 168 | 6,6 | 3586 | 0,80 | 2,4 |
| 4.RZK 3500 Lc-2 | 938 | 2979 | 96,5 | 0,91 | 187 | 6,6 | 4002 | 0,80 | 2,4 |
| 2p = 4 | | | | | | | | | |
| 5.RZK 3315 La-4 | 150 | 1480 | 94,5 | 0,86 | 32 | 6,0 | 1288 | 0,85 | 2,3 |
| 5.RZK 3315 Lb-4 | 188 | 1480 | 94,8 | 0,86 | 40 | 6,0 | 1610 | 0,85 | 2,3 |
| 5.RZK 3315 Lc-4 | 236 | 1481 | 95,0 | 0,86 | 51 | 6,0 | 2028 | 0,85 | 2,3 |
| 5.RZK 3315 Ld-4 | 266 | 1482 | 95,2 | 0,86 | 57 | 6,0 | 2285 | 0,85 | 2,3 |
| 5.RZK 3355 La-4 | 300 | 1484 | 95,4 | 0,86 | 64 | 6,0 | 2578 | 0,85 | 2,4 |
| 5.RZK 3355 Lb-4 | 375 | 1484 | 95,6 | 0,86 | 80 | 6,0 | 3222 | 0,85 | 2,4 |
| 5.RZK 3355 Lc-4 | 460 | 1484 | 95,8 | 0,86 | 89 | 6,0 | 3603 | 0,85 | 2,4 |
| 5.RZK 3400 La-4 | 473 | 1486 | 96,0 | 0,87 | 99 | 6,1 | 4051 | 0,85 | 2,4 |
| 5.RZK 3400 Lb-4 | 533 | 1486 | 96,3 | 0,87 | 111 | 6,2 | 4566 | 0,85 | 2,4 |
| 5.RZK 3400 Lc-4 | 600 | 1486 | 96,5 | 0,87 | 125 | 6,2 | 5144 | 0,85 | 2,4 |
| 4.RZK 3450 La-4 | 675 | 1486 | 96,7 | 0,89 | 137 | 6,3 | 5788 | 0,85 | 2,4 |
| 4.RZK 3450 Lb-4 | 750 | 1486 | 96,8 | 0,89 | 152 | 6,3 | 6431 | 0,85 | 2,4 |
| 4.RZK 3450 Lc-4 | 840 | 1488 | 96,8 | 0,89 | 171 | 6,3 | 7202 | 0,85 | 2,4 |
| 4.RZK 3500 La-4 | 938 | 1488 | 97,0 | 0,90 | 188 | 6,4 | 8038 | 0,85 | 2,3 |
| 4.RZK 3500 Lb-4 | 1050 | 1488 | 97,1 | 0,90 | 210 | 6,5 | 8986 | 0,85 | 2,3 |
| 4.RZK 3500 Lc-4 | 1200 | 1488 | 97,2 | 0,90 | 240 | 6,5 | 10270 | 0,85 | 2,3 |
| 2p = 6 | | | | | | | | | |
| 5.RZK 3315 La-6 | 135 | 984 | 93,7 | 0,81 | 31 | 5,4 | 1734 | 0,80 | 2,2 |
| 5.RZK 3315 Lb-6 | 150 | 984 | 93,9 | 0,81 | 35 | 5,4 | 1942 | 0,80 | 2,2 |
| 5.RZK 3315 Lc-6 | 188 | 985 | 94,1 | 0,81 | 43 | 5,4 | 2427 | 0,80 | 2,2 |
| 5.RZK 3315 Ld-6 | 236 | 987 | 94,6 | 0,83 | 53 | 5,4 | 3058 | 0,80 | 2,2 |
| 5.RZK 3355 La-6 | 266 | 987 | 94,8 | 0,83 | 59 | 5,4 | 3447 | 0,80 | 2,3 |
| 5.RZK 3355 Lb-6 | 300 | 987 | 94,9 | 0,83 | 67 | 5,4 | 3884 | 0,80 | 2,3 |
| 5.RZK 3400 La-6 | 375 | 987 | 95,3 | 0,84 | 82 | 5,6 | 4835 | 0,80 | 2,3 |
| 5.RZK 3400 Lb-6 | 460 | 988 | 95,3 | 0,84 | 92 | 5,6 | 5412 | 0,80 | 2,3 |
| 5.RZK3400 Lc-6 | 473 | 988 | 95,4 | 0,84 | 103 | 5,6 | 6092 | 0,80 | 2,3 |
| 4.RZK 3450 La-6 | 600 | 989 | 95,7 | 0,84 | 131 | 5,8 | 7721 | 0,85 | 2,4 |
| 4.RZK 3450 Lb-6 | 675 | 989 | 95,9 | 0,84 | 147 | 5,8 | 8686 | 0,85 | 2,4 |
| 4.RZK 3450 Lc-6 | 750 | 989 | 96,1 | 0,84 | 163 | 5,8 | 9651 | 0,85 | 2,4 |
| 4.RZK 3500 La-6 | 840 | 989 | 96,2 | 0,89 | 172 | 6,0 | 10809 | 0,85 | 2,4 |
| 4.RZK 3500 Lb-6 | 938 | 989 | 96,4 | 0,89 | 191 | 6,0 | 11968 | 0,85 | 2,4 |
| 4.RZK 3500 Lc-6 | 1050 | 989 | 96,6 | 0,89 | 214 | 6,0 | 13498 | 0,85 | 2,4 |

TRANSNORM HV MOTORS

Electrical data 19

Converter fed operation

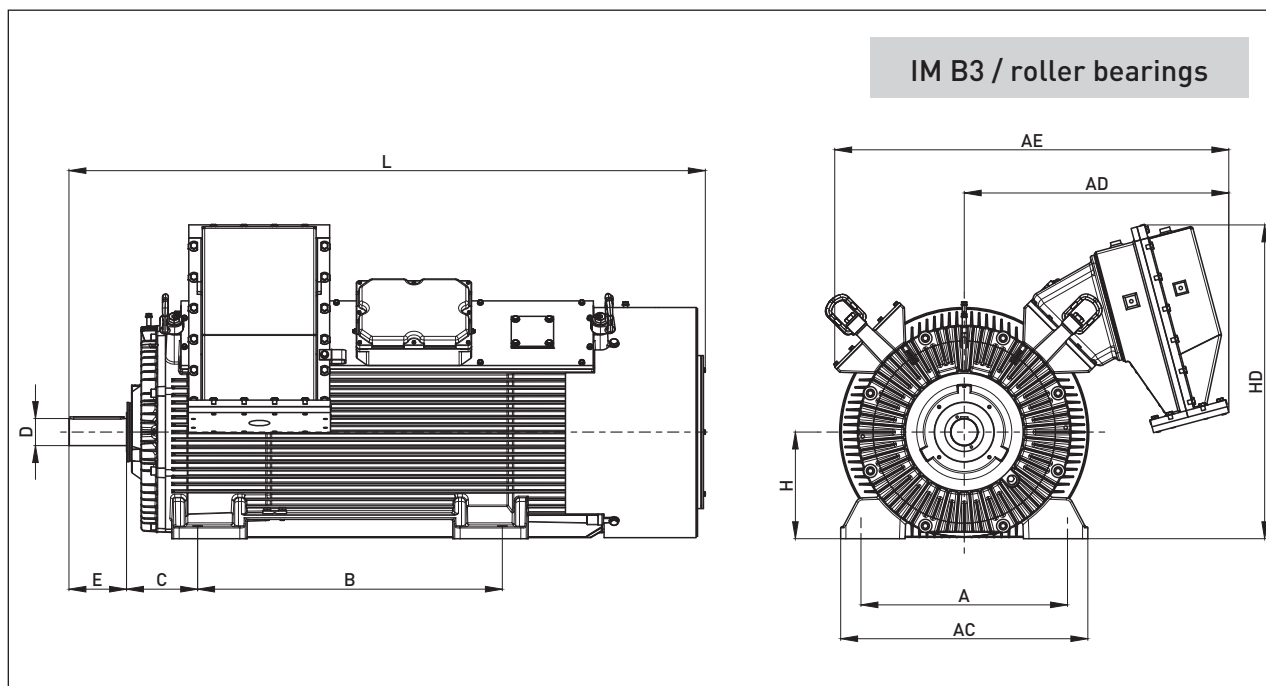
constant torque speed range 1:10

3,3 kV; 50 Hz

| Type | Power P _n kW | Nominal speed n 1/min | Motor efficiency η % | Power factor $\cos\phi$ | Nominal current I _n A | Start current I _s /I _N | Nominal torque T _n Nm | Start torque T ₀ /T _N | Maximum torque T _m /T _n |
|-----------------|-------------------------------|--------------------------------|------------------------------------|-------------------------------|---|--|---|---|---|
| 2p = 8 | | | | | | | | | |
| 5.RZK 3355 La-8 | 150 | 743 | 94,4 | 0,75 | 37 | 5,2 | 2570 | 0,70 | 2,1 |
| 5.RZK 3355 Lb-8 | 188 | 743 | 94,7 | 0,75 | 46 | 5,2 | 3210 | 0,70 | 2,1 |
| 5.RZK 3355 Lc-8 | 236 | 743 | 94,9 | 0,75 | 58 | 5,2 | 4045 | 0,70 | 2,1 |
| 5.RZK 3400 La-8 | 266 | 743 | 95,1 | 0,76 | 64 | 5,3 | 4570 | 0,70 | 2,1 |
| 5.RZK 3400 Lb-8 | 300 | 743 | 95,3 | 0,76 | 72 | 5,3 | 5144 | 0,70 | 2,1 |
| 4.RZK 3450 La-8 | 420 | 744 | 95,5 | 0,76 | 101 | 5,3 | 7176 | 0,75 | 2,2 |
| 4.RZK 3450 Lb-8 | 473 | 744 | 95,8 | 0,76 | 114 | 5,3 | 8074 | 0,75 | 2,2 |
| 4.RZK 3450 Lc-8 | 533 | 744 | 95,8 | 0,76 | 128 | 5,3 | 9088 | 0,75 | 2,2 |
| 4.RZK 3500 La-8 | 600 | 745 | 96,0 | 0,77 | 142 | 5,2 | 10240 | 0,70 | 2,2 |
| 4.RZK 3500 Lb-8 | 675 | 744 | 96,1 | 0,77 | 160 | 5,2 | 11532 | 0,70 | 2,2 |

TRANSNORM HV MOTORS

20 Dimensions

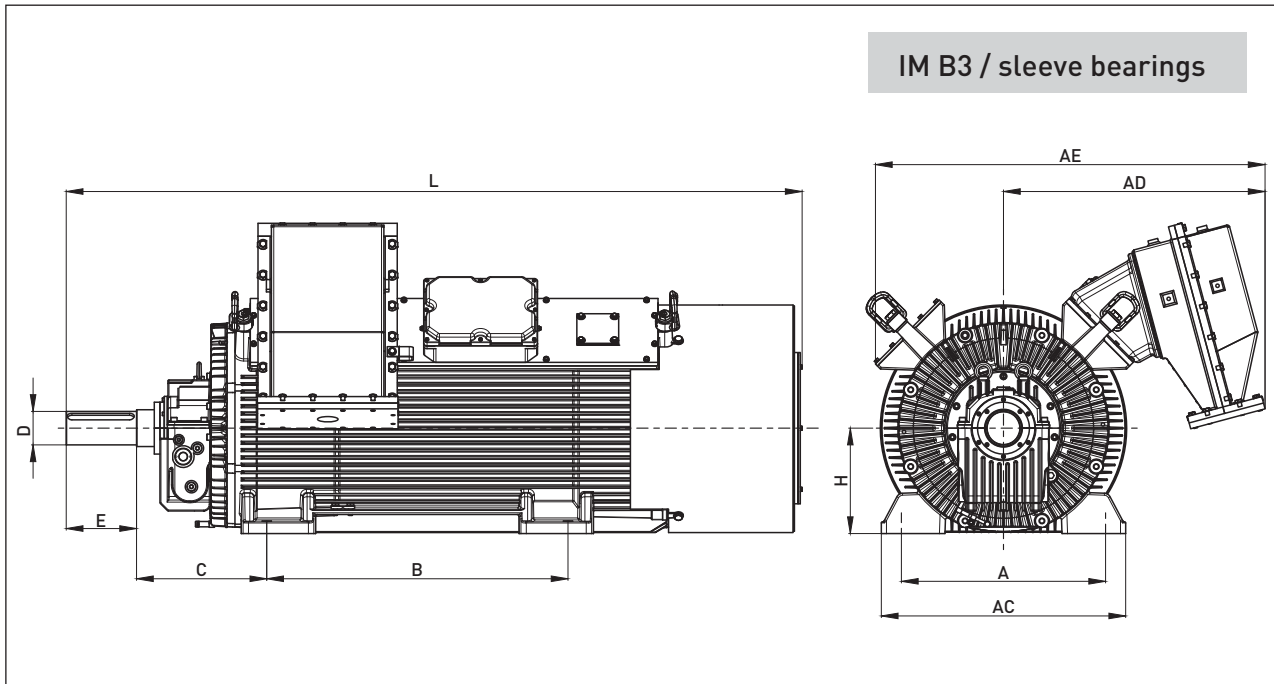


| type | pole | dimensions | | | | | | | | | | |
|------|------|------------|----------|----------|----------|---------|---------|---------|---------|---------|----------|---------|
| | | A mm | AC mm | AD mm | AE mm | B mm | C mm | D mm | E mm | H mm | HD mm | L mm |
| 315 | 2 | 610 | 730 | 785 | 1165 | 900 | 200 | 80 | 170 | 315 | 940 | 1900 |
| | >=4 | 610 | 730 | 785 | 1165 | 900 | 200 | 100 | 210 | 315 | 940 | 1940 |
| 355 | 2 | 686 | 810 | 815 | 1240 | 1000 | 224 | 80 | 170 | 355 | 1030 | 1995 |
| | >=4 | 686 | 810 | 815 | 1240 | 1000 | 224 | 100 | 210 | 355 | 1030 | 2035 |
| 400 | 2 | 750 | 940 | 830 | 1275 | 1120 | 254 | 80 | 170 | 400 | 1100 | 2105 |
| | >=4 | 750 | 940 | 830 | 1275 | 1120 | 254 | 110 | 210 | 400 | 1100 | 2145 |
| 450 | >=4 | 850 | 1050 | 890 | 1390 | 1250 | 280 | 120 | 210 | 450 | 1200 | 2550 |
| 500 | >=4 | 950 | 1160 | 920 | 1465 | 1320 | 315 | 140 | 250 | 500 | 1280 | 2825 |
| 560 | >=4 | 1060 | 1270 | 955 | 1550 | 1400 | 335 | 160 | 240 | 560 | 1375 | ETO |
| 630 | >=4 | 1120 | 1370 | 990 | 1645 | 1600 | 335 | 180 | 240 | 630 | 1475 | ETO |
| 710 | >=4 | ETO | ETO | ETO | ETO | ETO | ETO | 190 | 350 | 710 | ETO | ETO |

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TRANSNORM HV MOTORS

Dimensions 21

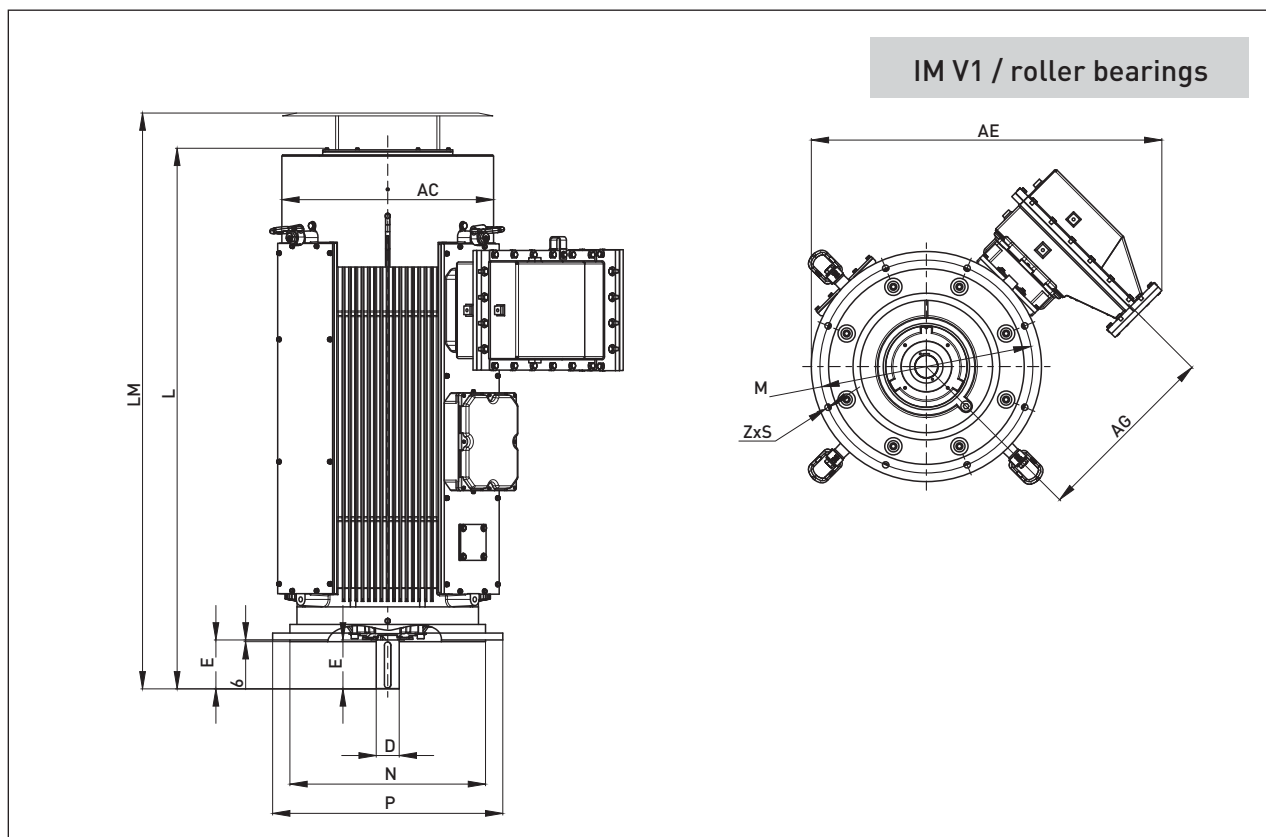


| type | pole | dimensions | | | | | | | | | | |
|------|------|------------|----------|----------|----------|---------|---------|---------|---------|---------|----------|---------|
| | | A mm | AC mm | AD mm | AE mm | B mm | C mm | D mm | E mm | H mm | HD mm | L mm |
| 315 | 2 | 610 | 730 | 785 | 1165 | 900 | 390 | 75 | 140 | 315 | 940 | 2060 |
| | >=4 | 610 | 730 | 785 | 1165 | 900 | 390 | 75 | 140 | 315 | 940 | 2060 |
| 355 | 2 | 686 | 810 | 815 | 1240 | 1000 | 365 | 80 | 170 | 355 | 1030 | 2165 |
| | >=4 | 686 | 810 | 815 | 1240 | 1000 | 365 | 100 | 210 | 355 | 1030 | 2205 |
| 400 | 2 | 750 | 940 | 830 | 1275 | 1120 | 430 | 85 | 170 | 400 | 1100 | 2605 |
| | >=4 | 750 | 940 | 830 | 1275 | 1120 | 430 | 100 | 210 | 400 | 1100 | 2645 |
| 450 | 2 | 850 | 1050 | 890 | 1390 | 1250 | 475 | 95 | 170 | 450 | 1200 | 2835 |
| | >=4 | 850 | 1050 | 890 | 1390 | 1250 | 475 | 120 | 210 | 450 | 1200 | 2875 |
| 500 | 2 | 950 | 1160 | 920 | 1465 | 1320 | 530 | 120 | 210 | 500 | 1280 | 3175 |
| | >=4 | 950 | 1160 | 920 | 1465 | 1320 | 530 | 140 | 250 | 500 | 1280 | 3215 |
| 560 | 2 | 1060 | 1270 | 955 | 1550 | 1400 | 560 | 140 | 250 | 560 | 1375 | ETO |
| | >=4 | 1060 | 1270 | 955 | 1550 | 1400 | 560 | 160 | 240 | 560 | 1375 | ETO |
| 630 | >=4 | 1120 | 1370 | 990 | 1645 | 1600 | 570 | 180 | 240 | 630 | 1475 | ETO |
| 710 | >=4 | ETO | ETO | ETO | ETO | ETO | ETO | 190 | 350 | 710 | ETO | ETO |

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TRANSNORM HV MOTORS

22 Dimensions



IM V1 / roller bearings

| type | pole | dimensions | | | | | | | | | | | |
|------|------|------------|----------|----------|---------|---------|---------|----------|---------|---------|---------|---------|---------------|
| | | AC mm | AG mm | AE mm | D mm | E mm | L mm | LM mm | P mm | N mm | M mm | S mm | Z Quantity |
| 315 | 2 | 740 | 650 | 1225 | 80 | 170 | 1900 | 2030 | 800 | 680 | 740 | 22 | 8 |
| | >=4 | 740 | 650 | 1225 | 100 | 210 | 1940 | 2070 | 800 | 680 | 740 | 22 | 8 |
| 355 | 2 | 820 | 730 | 1325 | 80 | 170 | 1995 | 2125 | 900 | 780 | 840 | 22 | 8 |
| | >=4 | 820 | 730 | 1325 | 100 | 210 | 2035 | 2165 | 900 | 780 | 840 | 22 | 8 |
| 400 | 2 | 885 | 711 | 1355 | 80 | 170 | 2105 | 2235 | 1000 | 880 | 940 | 22 | 8 |
| | >=4 | 885 | 711 | 1355 | 110 | 210 | 2145 | 2275 | 1000 | 880 | 940 | 22 | 8 |
| 450 | >=4 | 1000 | 830 | 1520 | 120 | 210 | 2550 | 2680 | 1150 | 1000 | 1080 | 22 | 8 |
| 500 | >=4 | 1100 | 880 | 1515 | 140 | 250 | 2825 | 2955 | 1270 | 1120 | 1200 | 35 | 8 |
| 560 | >=4 | ETO | ETO | ETO | 160 | 240 | ETO | ETO | ETO | ETO | ETO | ETO | ETO |
| 630 | >=4 | ETO | ETO | ETO | 180 | 240 | ETO | ETO | ETO | ETO | ETO | ETO | ETO |
| 710 | >=4 | ETO | ETO | ETO | 190 | 350 | ETO | ETO | ETO | ETO | ETO | ETO | ETO |

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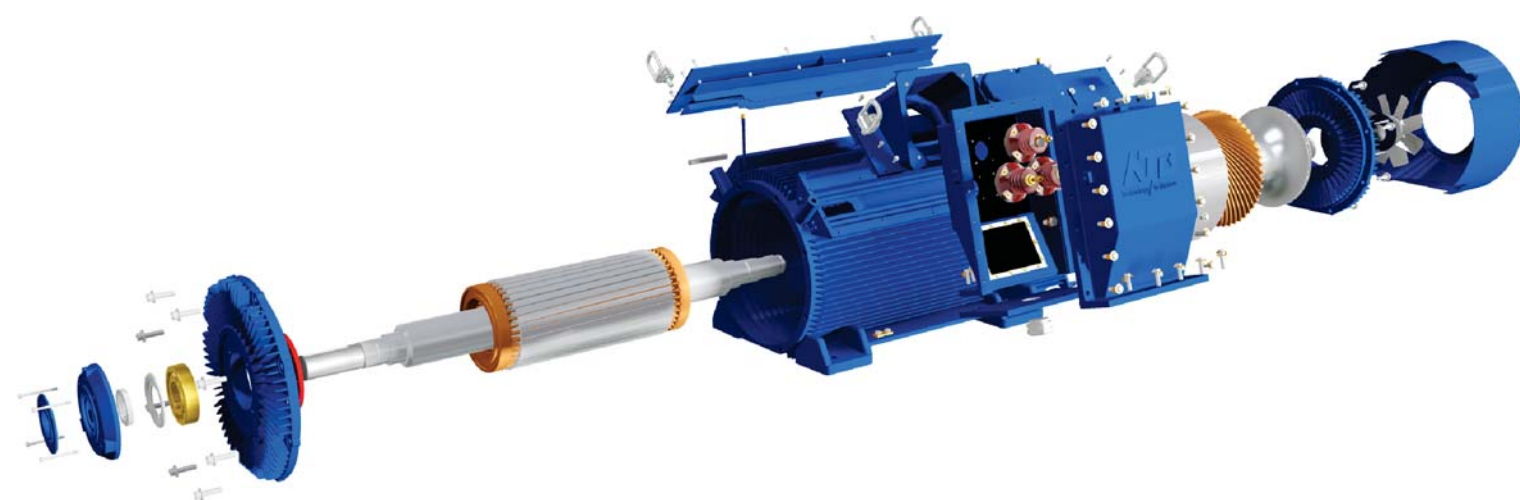
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