

Three-phase Induction Motors
Global Series
Empowering the Future



Catalog 01-2016

Cutting-edge Technologies of Toshiba + Mitsubishi Electric = TMEIC

With a combined history of more than 200 years of expertise in industrial machinery production, Toshiba Mitsubishi-Electric Industrial Systems Corporation (TMEIC) is at the forefront when it comes to ensuring the continuous operation of industrial manufacturing worldwide. Our benchmarking motors continually receive high evaluations for their superior reliability, performance, quality, durability, low maintenance and long service life. From metals, paper and materials handling to chemicals, oil and gas, TMEIC motors are truly driving industry.

The TM21-G Series is our answer to providing superior reliability, quality and performance for the manufacturing and processing needs of future generations. All motors in this class-leading series have an amazingly small footprint, lightweight construction, are compliant with major international standards and require minimal maintenance. These size, weight and rated performance advantages contribute to ensuring that TMEIC has a motor that matches even the most diversified customer needs.

When it comes to powering industrial manufacturing systems under harsh environmental conditions, you need a motor you can trust at the core. You'll be glad you chose TMEIC.

Our motors are empowering industries around the globe



Three-phase Induction Motors Global Series

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Compact, High-performance Motors Built for Future Industrial Manufacturing Needs



Benchmarking Motors for a New Era

Oil & Gas



Ultrahigh-speed, large capacities and flexibility

A long history of reliability and the flexibility to adapt to diverse machinery layouts continue to attract customer praise. As a leading manufacturer, TMEiC proposes optimal drive and motor products, including specially designed ultrahigh-speed motors, and generators.

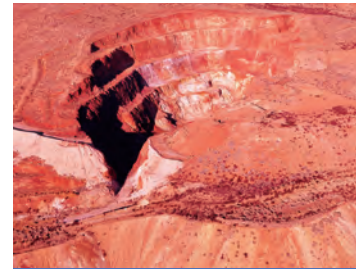
Chemicals



Highly reliable, explosion-proof with minimal maintenance requirements

Explosion-proof motors compliant with IEC/ATEX global standards and designed for use in petroleum refineries and petrochemical facilities. Safe and reliable operation is guaranteed, even in potentially dangerous areas where explosive gases could be present.

Mining



Excellent durability under harsh operating conditions

Motors for mining machinery like grinding mills, mine hoists and conveyors, all with proven durability in harsh operating environments. Whether a large-capacity motor, overhung installation or a motor/variable-frequency drive combination, TMEiC has a best-match product for you.

Durable, Low-maintenance TM21-G Series Lineup

Owing to compact, lightweight structural configurations, TM21-G Series motors offer enhanced installation flexibility, require less maintenance and can be replaced more easily at the end of service life. A highly durable construction, including explosion-proof models for hazardous environment applications, contributes to ensuring continuous nonstop operation for extended periods of time.

Amazingly small footprint

Minimizing weight

Compliance to International Standards

Minimal maintenance required

Exceptional reliability

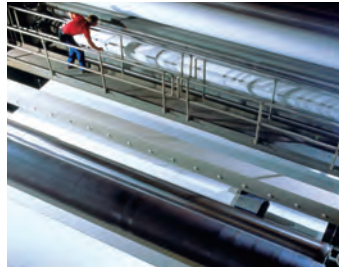
Metals



Robust operation in severe environments

Motors designed to withstand heat, steam, dust and other particulates, as well as impact force when operating in severe environments. When it comes to supplying reliable products and flexible solutions, TMEIC has an excellent record of customer satisfaction.

Paper



Compact in size with high-precision control

Compact, highly efficient motors compliant with international standards. Fin frame sizes up to 560 enable use where installation space is limited, while easy grease removal and bearing maintenance contribute to a long service life.

Water Treatment



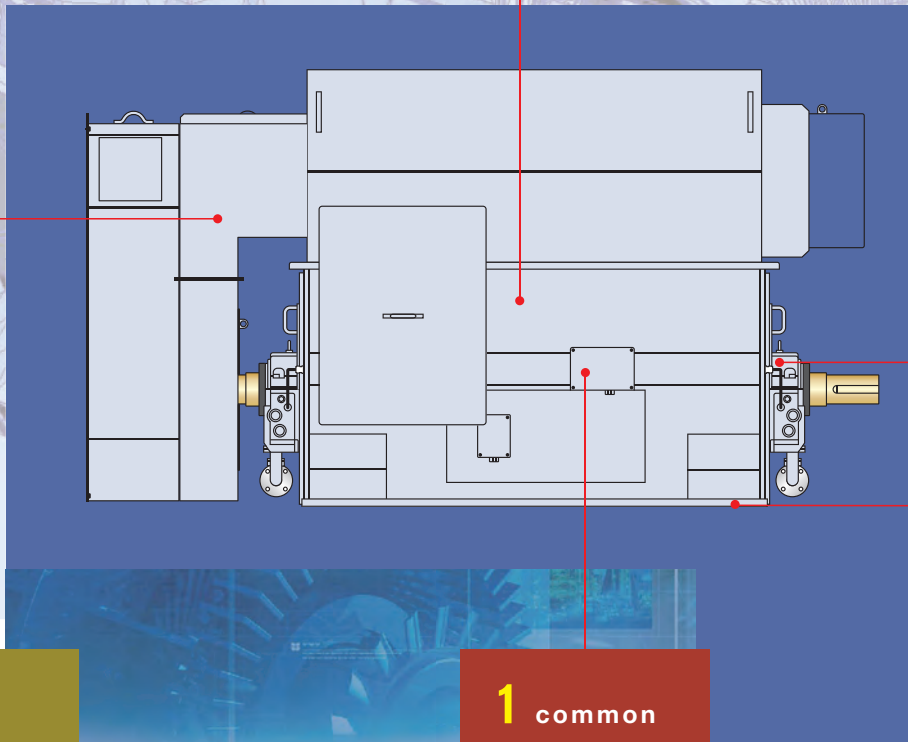
High quality and long-term stability

Motors utilized in water-supply and sewerage systems include those in water-treatment pumps and blowers, and flood-control pumps among other applications. These motors start, stop and run at variable speeds according to daily load requirements. Highly evaluated for their high quality and long-term stable operation, TMEIC motors are contributing to the stable operation of social infrastructures.

Designed with Industrial-use in Mind

Total weight reduced

Maintenance simplified



2-piece fan cover

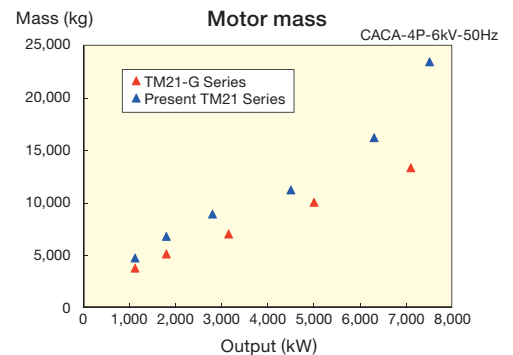
1 common junction box as standard equipment

Greatly reduced installation time

Lightweight motors

World-class Lightweight Design

The optimal design of these world-class motors has realized a 20–30% weight reduction compared to our previous motor series. This contributes to various benefits including reduced shipping cost, lower foundation load/crane capacity and simplified maintenance.

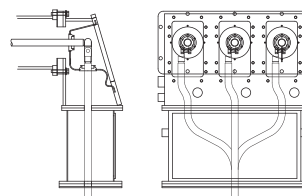


Main circuit terminal box

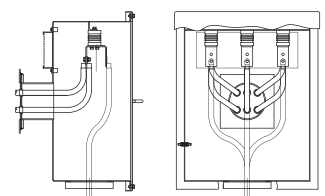
Choice of Terminal Boxes

A variety of terminal boxes are available as standard equipment in response to market demand. Choices include a standard terminal box, a phase-segregated terminal box and a large, a terminal box with large double terminals compliant with NEMA standards.

Phase-segregated terminal box



Standard terminal box





Motor Materials, Shipping & Manufacturing Costs Reduced

Lighter motor introduced, enabling...

- Reduction in motor, shipping and foundation costs
- Reduction in installation work



Exceptionally Low Maintenance Cost

- Replace sleeve bearing metal without disassembling motor

Antifriction bearings used throughout, enabling...

- Easy access to backup bearings required for periodic replacement
- Low-cost maintenance



Maintenance So Easy Anyone Can Do It

Two-piece fan cover introduced, enabling...

- Removal of heat exchanger without disassembly
- Easy maintenance



Installation and Replacement Work Reduced

Instrument cables connected in one junction box, enabling...

- Separate cable connections to be gathered in one spot
- Substantial reduction in installation and replacement work



Shorter SDM Time Realized

A shorter total motor length is introduced, enabling...

- Installation in narrow spaces
- Reduction in time required for installation and alignment
- Reduction in time required for shutdown maintenance (SDM) during overhauls



Junction box

Cable Connection Work Simplified

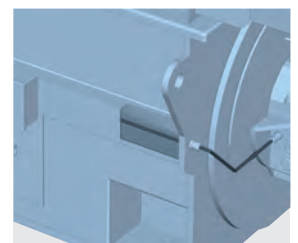
Instrument cables are routed into a single junction box and the incorporation of clamp-type terminals as standard simplifies the cable connection process. As a result, external cable connection work is simplified reducing installation times. Furthermore, the junction box is made of stainless steel, increasing operating durability under harsh conditions.



Cable duct

Replacement So Easy a Novice Can Do It

Instrument and space heater cables pass through an IP55 cable duct that is hermetically sealed using steel plates. This helps to ensure motor operation even in harsh environments. Additionally the iron piping and armored cables required when running cables alongside the motor surface have been eliminated. As a result, less time and effort are required when replacing instruments, and it's so easy virtually anyone can do it.



Nothing Quite Like It— Experience a TM21-G



WP II (IC01), TEAAC (IC611), TEWAC (IC81W)

Rated voltage	Up to 11kV	
Rated speed	Up to 3,600rpm (Applicable for VVVF drive)	
Number of poles	2P–14P	
Enclosure	WP II	IP24W
	TEAAC	IP55 (IP56)
	TEWAC	IP55 (IP56)
Mounting method	IMB3 (Horizontal), IMV1 (Vertical)	
Shaft height	Up to 900mm	

TEFC (IC411)

Rated voltage	Up to 6.6kV
Rated speed	Up to 3,600rpm (Applicable for VVVF drive)
Number of poles	2P–8P
Enclosure	IP55
Mounting method	IMB3 (Horizontal)
Shaft height	Up to 560mm



Features

High Reliability resulting from use of proven design technology, manufacturing expertise, wide use of robotics, tight quality control and testing

High Efficiency resulting from detailed analysis of the electromagnetic field patterns and ventilating air flows

High Strength Insulation through the use of robotic insulation winding and use of an oversized epoxy resin vacuum impregnation tank for creating strong support and insulation

High Mechanical Strength through use of static and dynamic strength analysis of stator frame, rotor, shaft and bearings. Motor shafts are made of forged steel with high tensile strength.

Benefits

Many years of excellent trouble-free service under difficult working conditions

Low electrical losses and high power conversion

Withstands surge and minimizes electrical shorts and winding failure

Minimizes mechanical deflection and vibration

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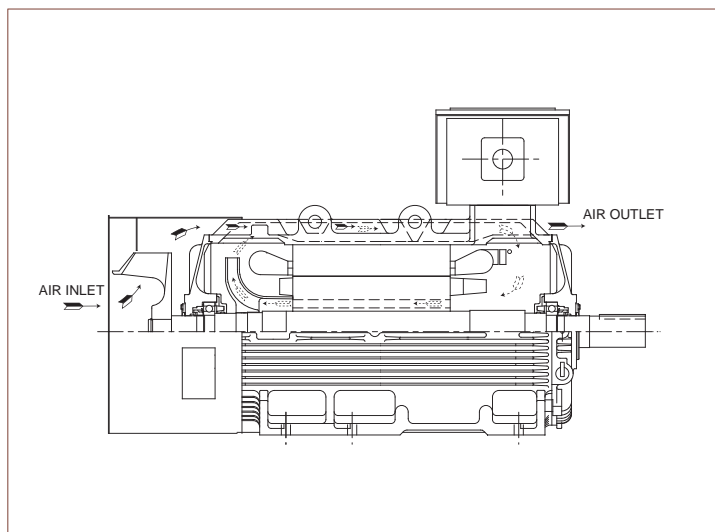


Totally Enclosed Fan Cooling System

Classifications: IC411, IP55

TMEIC motors equipped with totally enclosed fan cooling systems are designed to comply with IC411 and IP55 classifications. The fan is mounted on the rotor and enclosed in the case so that the cooling-air flow is directed over the surface of the motor. Enclosure with IP55 classification are designed to prevent dust infiltration, thereby prohibiting particulates from reaching the motor and ensuring smooth, continuous operation. They are also designed so that water sprayed onto the frame from any direction is prevented from permeating and causing any harmful effect. Applicable frame sizes: Fr.315 to Fr.560.

■ Fr.315 to Fr.560

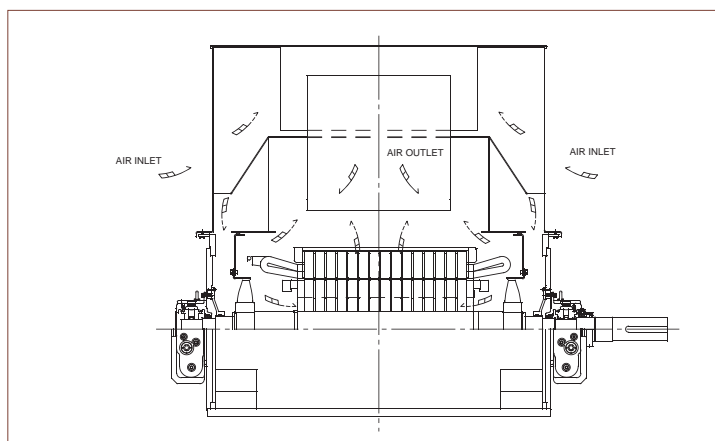


Weather-protected Type II Cooling System

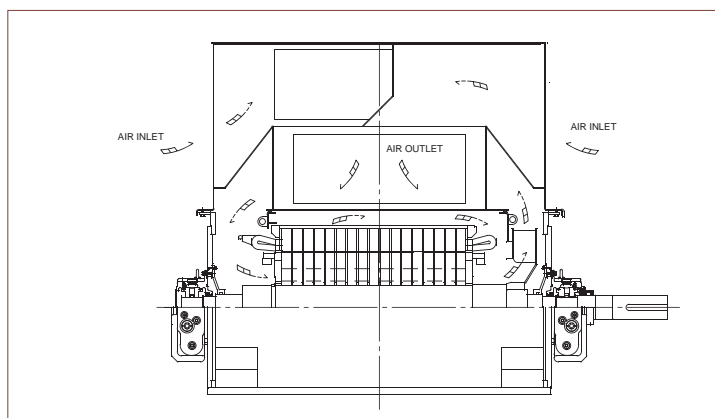
Classifications: IC01, IP24W

TMEIC motors equipped with weather-protected type II (WP II) cooling systems are classified as IP24 and IC01 under IEC standards. The ventilation passages in these motors are protected so that rain, snow and air-borne particles cannot permeate electrical components. Both the intake and exhaust ventilation passages are designed with at least three 90-degree elbows in the direction of airflow, and the airflow speed in the low-velocity area in the intake-air path does not exceed 600ft/min.

■ Two-sided ventilation for 2 and 4 poles



■ One-sided ventilation for 6 poles or more

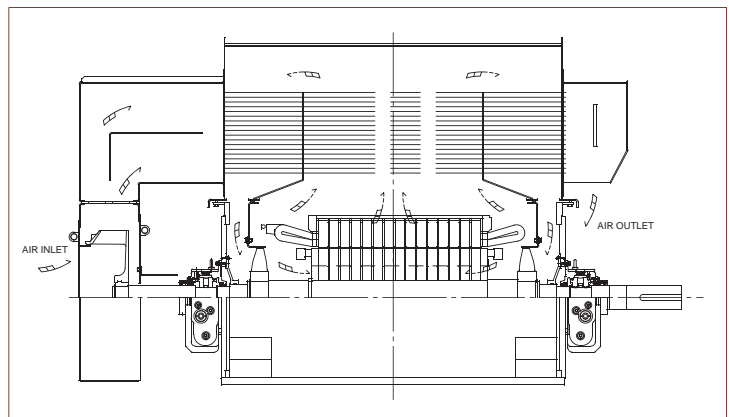


Totally Enclosed Air-to-air Cooling System

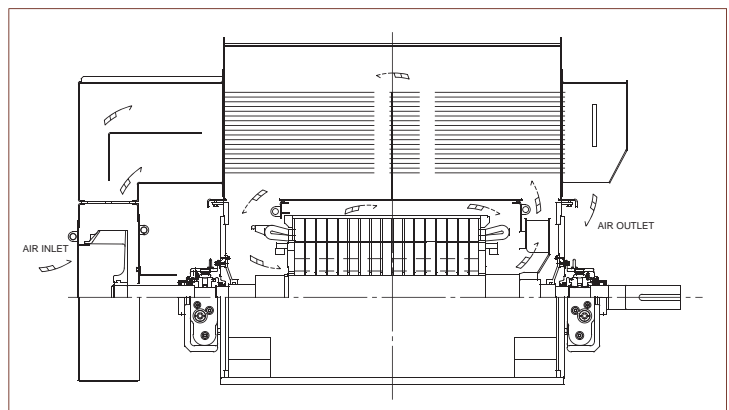
Classifications: IC611, IP55

TMEIC motors equipped with totally enclosed air-to-air cooling systems are classified as IC611 and IP55 under IEC standards. These motors are cooled through a heat-exchanging process that utilizes internal air circulated through the heat exchanger. Both air re-circulated through the motor and external air drawn in are circulated by the fan mounted on the motor shaft and driven by the rotor. The minimum applicable frame size is 315-1000, and the standard cooling tube material is either corrosion-resistant treated carbon steel or stainless steel. Machines in the IP55 classification are designed to prevent the permeation of dust that could interfere with proper operation of the machinery. They are also built so that water sprayed onto the motor from any direction has no harmful effect.

■ Two-sided ventilation for 2 and 4 poles



■ One-sided ventilation for 6 poles or more

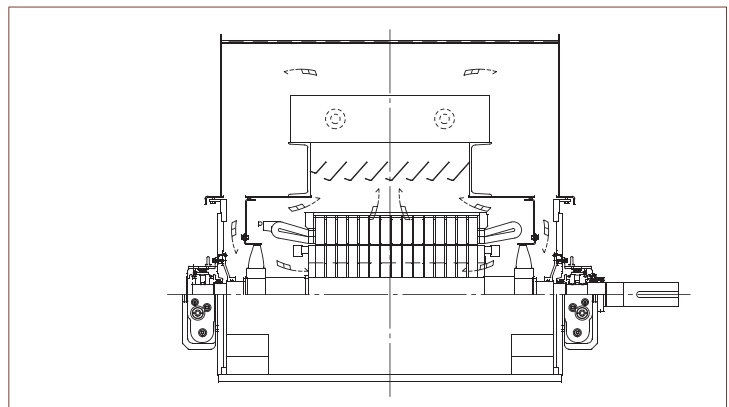


Totally Enclosed Water-to-air Cooling System

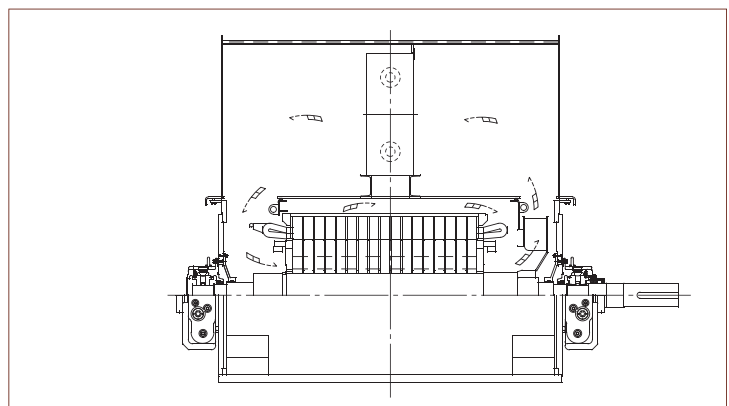
Classifications: IC81W, IP55

TMEIC motors equipped with totally enclosed water-to-air cooling systems are classified as IC81W and IP55 under IEC standards. These motors are cooled through a heat-exchanging process that utilizes internal air circulated through a heat exchanger that is cooled by fresh water. The internal air is circulated by a fan mounted on the motor shaft. The minimal applicable frame size is 315-1000, and the standard cooling tube material is de-oxygenated copper tubing (a single tube). Machines in the IP55 classification are designed to prevent the permeation of dust that could interfere with proper operation of the machinery. They are also built so that water sprayed onto the motor from any direction has no harmful effect.

■ Two-sided ventilation for 2 and 4 poles



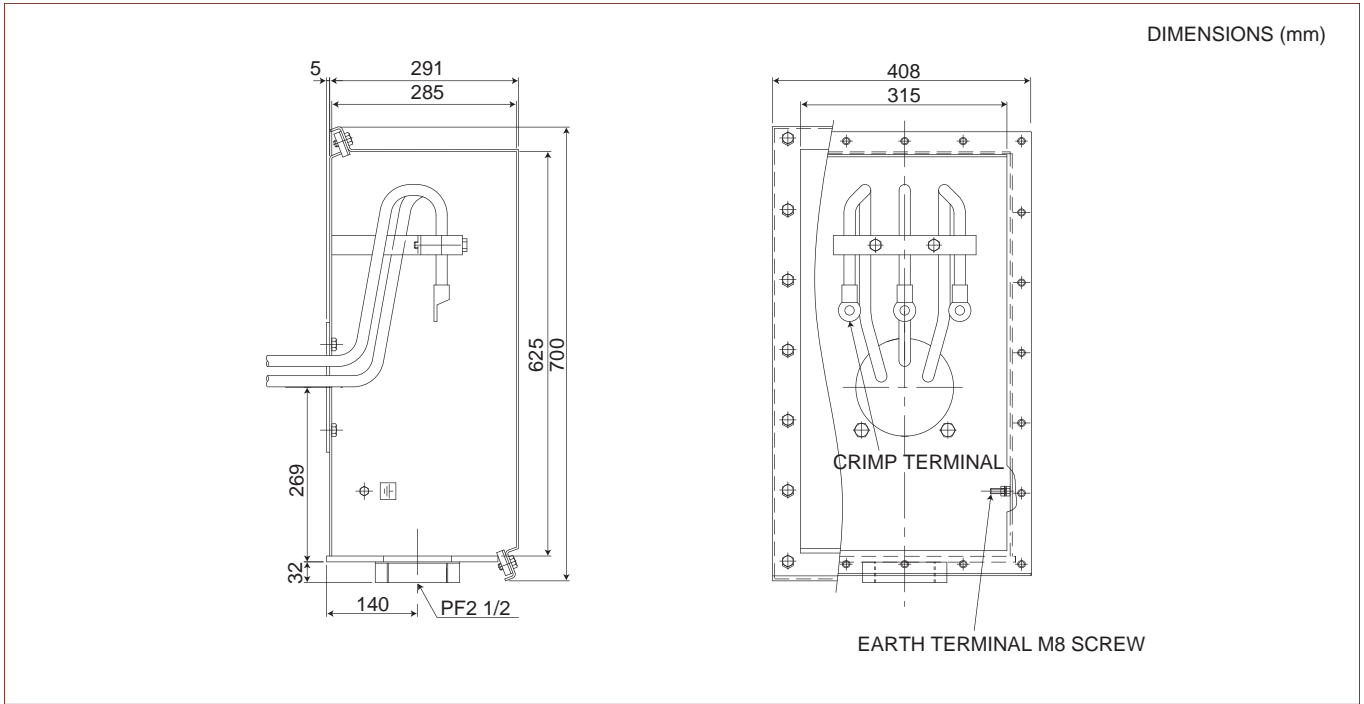
■ One-sided ventilation for 6 poles or more



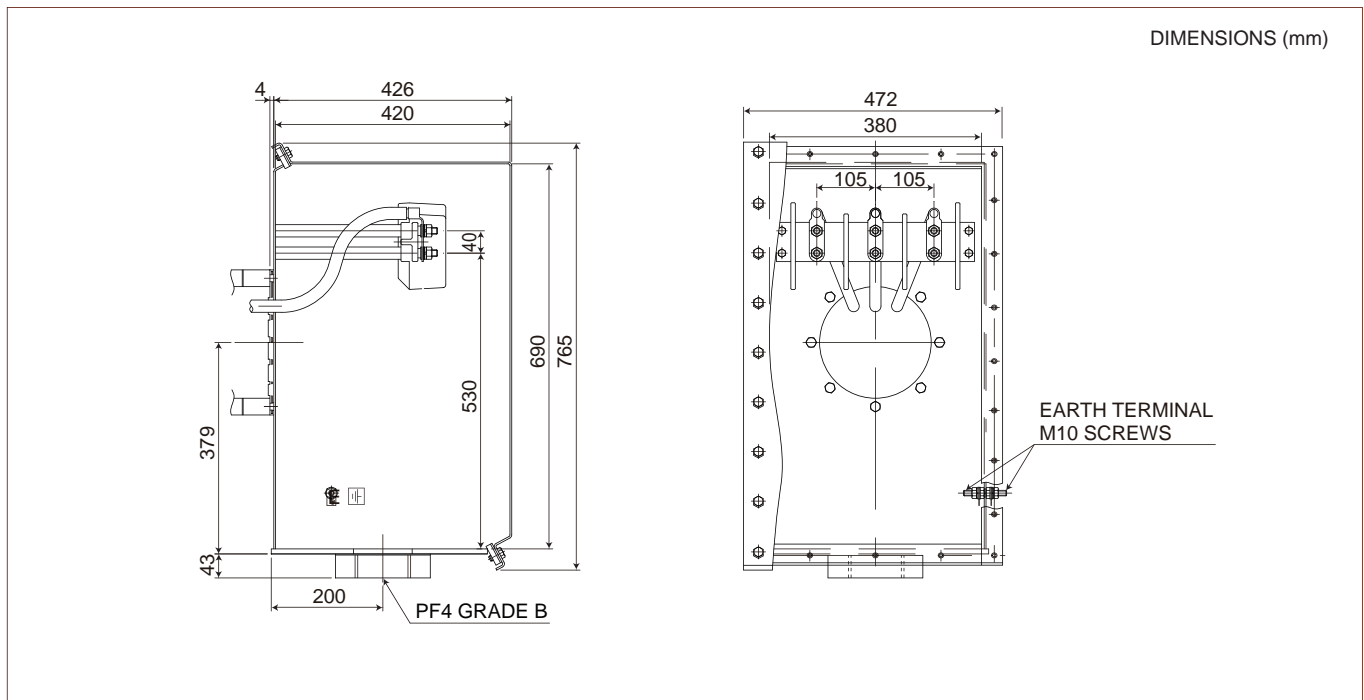
Mechanical Design

Main Terminal Boxes

The figure below shows the main terminal box which is applied to motors below.
Enclosure cooling: IC411 (TEFC)
Frame: Fr. 315 to Fr. 450
Voltage: up to 6.6kV



The figure below shows the main terminal box which is applied to motors below.
Enclosure cooling: IC411 (TEFC)
Frame: Fr. 500, Fr. 560
Voltage: up to 6.6kV



Mechanical Design

Main Terminal Boxes

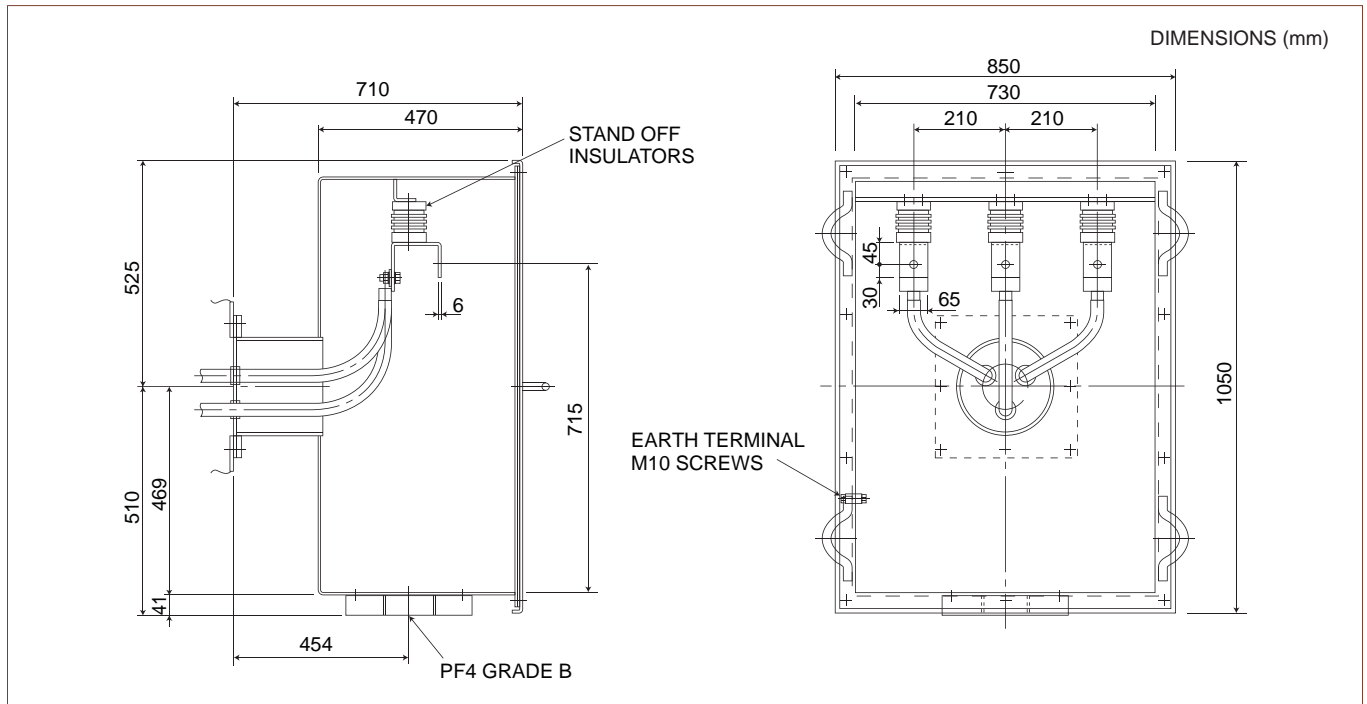
Insulator type terminal box

The figure below shows the main terminal box which is applied to motors below.

Enclosure cooling: IC01•IP24W (WPII), IC611 (TEAAC), IC81W (TEWAC)

Frame: Fr.400 to Fr.630

Voltage: up to 11kV



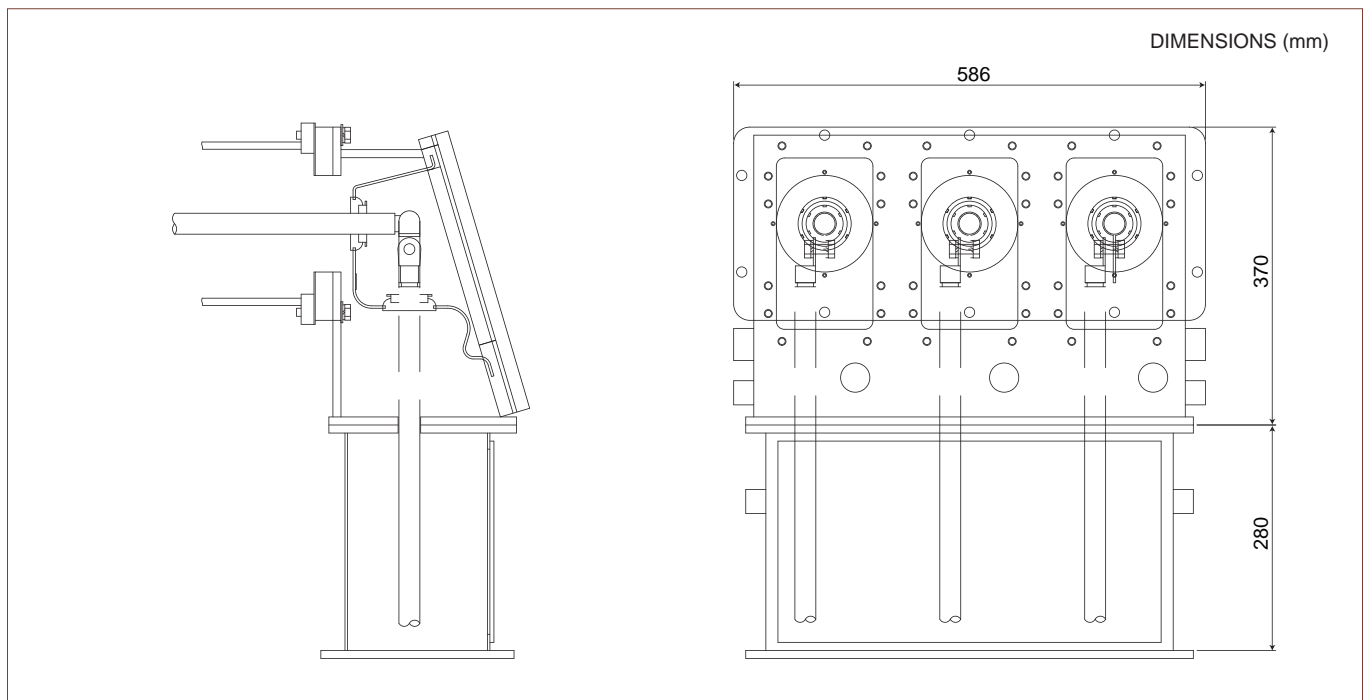
Phase-segregated type terminal box

The figure below shows the main terminal box which is applied to motors below.

Enclosure cooling: IC01•IP24W (WPII), IC611 (TEAAC), IC81W (TEWAC)

Frame: Fr.400 to Fr.630

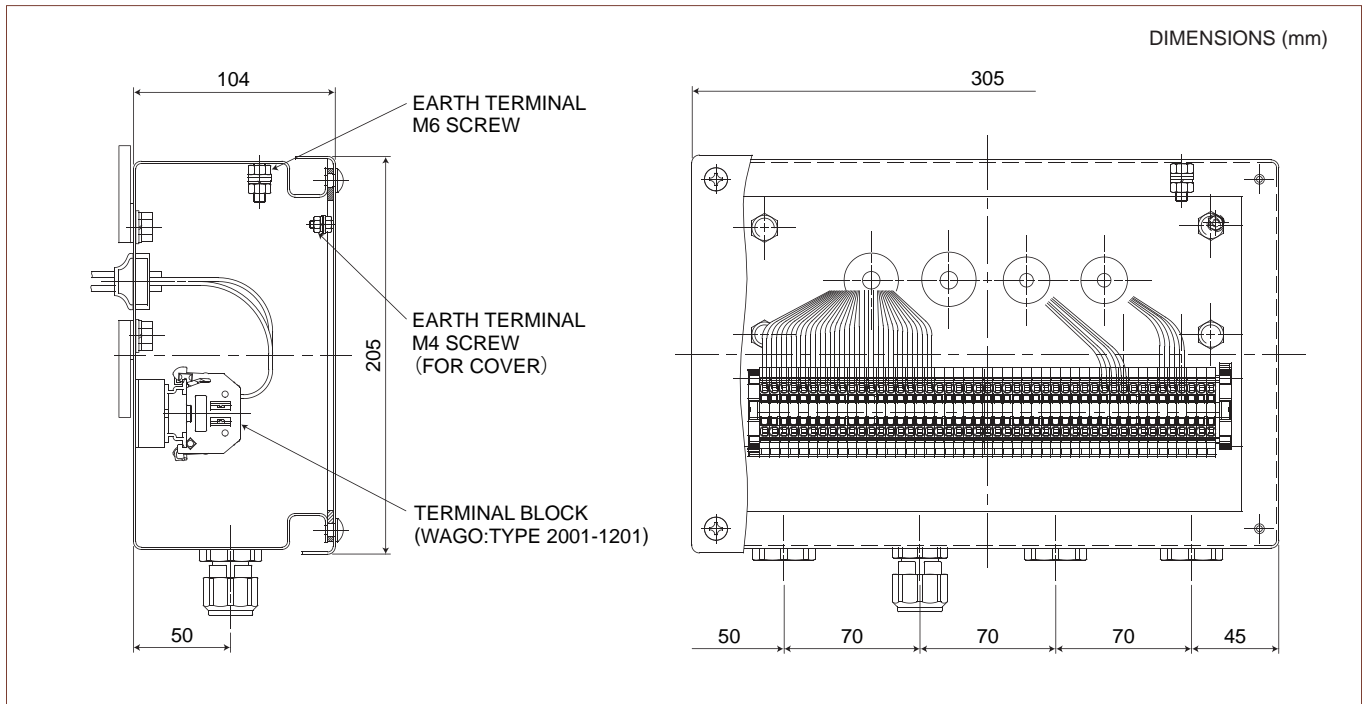
Voltage: up to 11kV



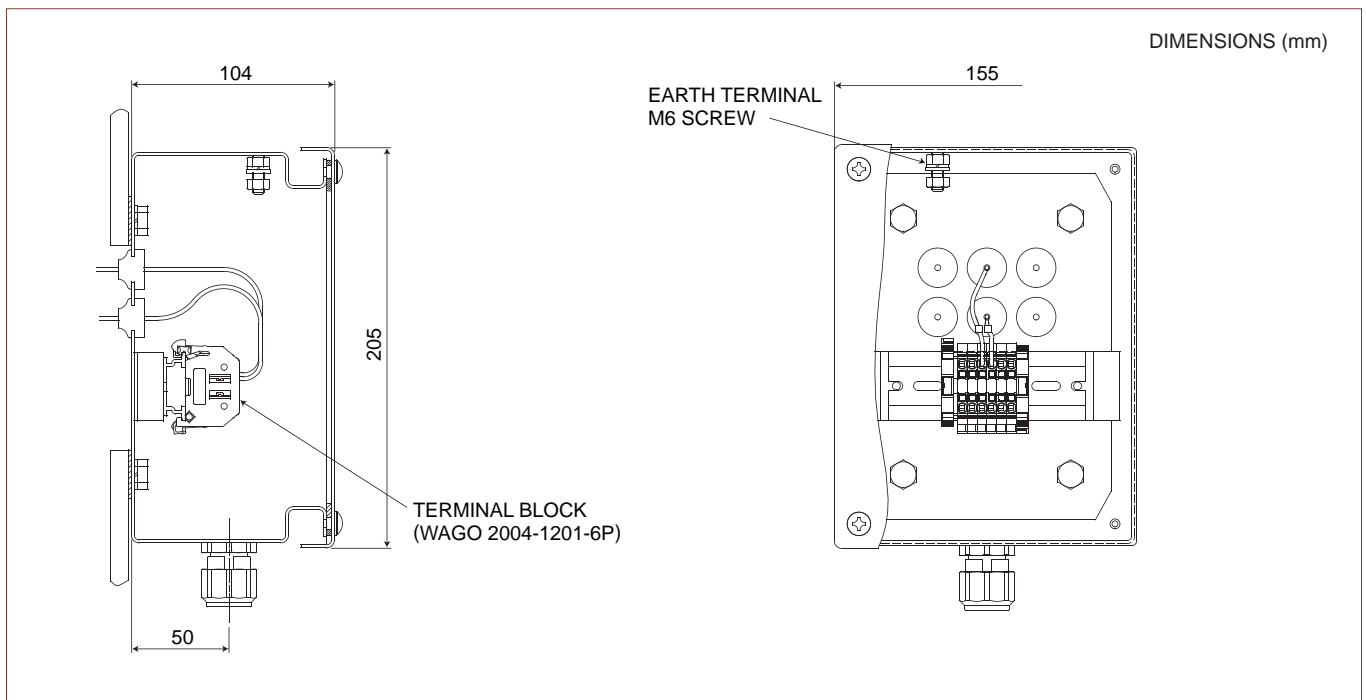
Mechanical Design

Auxiliary Terminal Boxes

The figure below shows the auxiliary terminal box for stator winding RTDs which is applied to motors below.
Enclosure cooling: IC01•IP24W (WP II), IC611 (TEAAC), IC81W (TEWAC)
Frame: Fr. 400 to Fr. 630



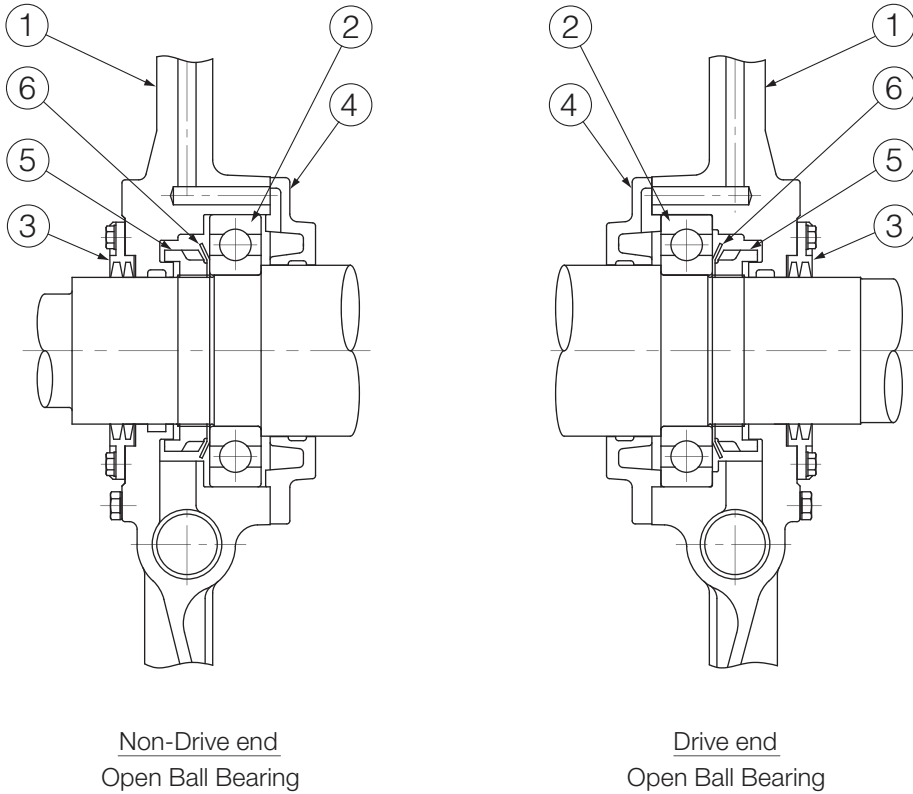
The figure below shows the auxiliary terminal box for space heaters which is applied to motors below.
Enclosure cooling: IC01•IP24W (WP II), IC611 (TEAAC), IC81W (TEWAC)
Frame: Fr. 400 to Fr. 630



Mechanical Design

Bearings – Grease Lubricating Type Antifriction Bearings (For Direct Coupled)

The figure below shows the structural drawing of an antifriction bearing which is applied to direct coupled driven motors.
 Enclosure cooling: IC411 (TEFC)
 Frame: Fr.315



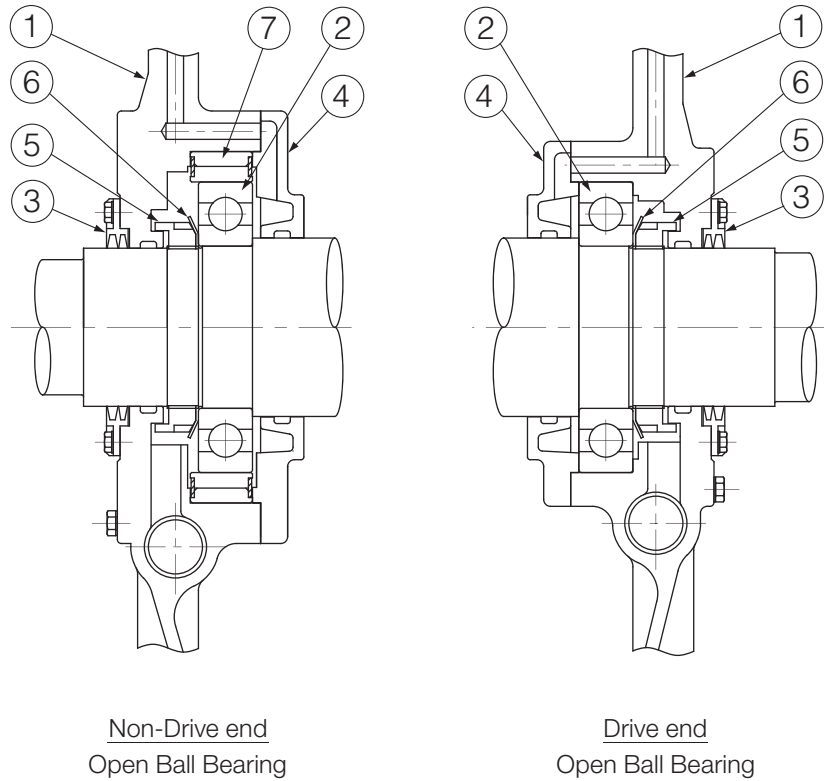
Part No.	Part Name
①	Bearing Bracket
②	Bearing
③	Labyrinth Seal
④	Inner Bearing Cover / Oil Seal
⑤	Grease Runner
⑥	Bearing Washer

1

Mechanical Design

Bearings – Grease Lubricating Type Antifriction Bearings (For Direct Coupled)

The figure below shows the structural drawing of an antifriction bearing which is applied to direct coupled driven motors.
 Enclosure cooling: IC411 (TEFC)
 Frame: Fr.355 to Fr.560



Non-Drive end
Open Ball Bearing

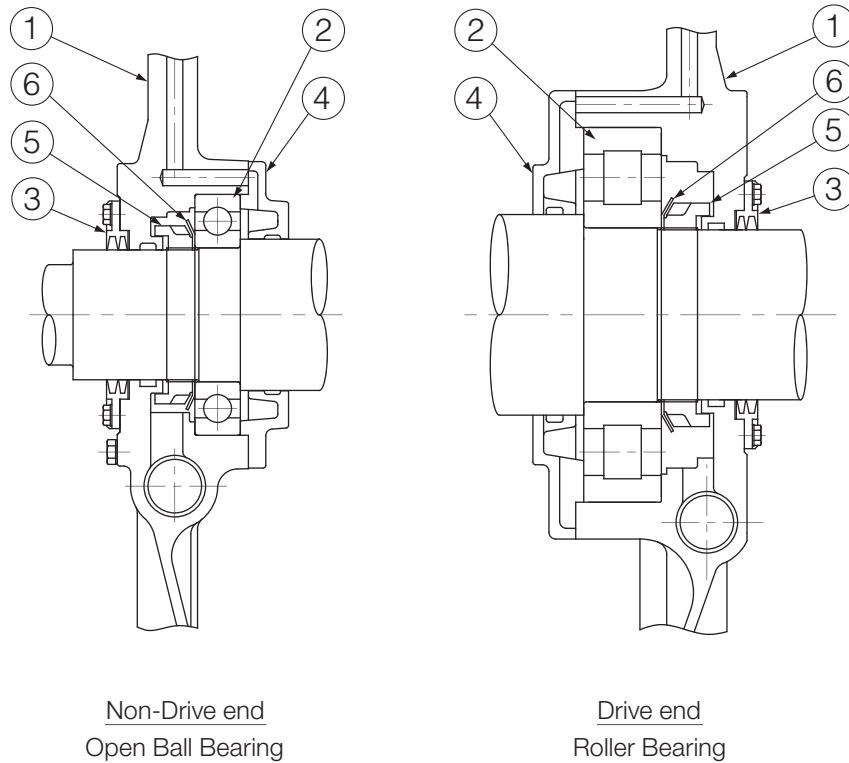
Drive end
Open Ball Bearing

Part No.	Part Name
①	Bearing Bracket
②	Bearing
③	Labyrinth Seal
④	Inner Bearing Cover / Oil Seal
⑤	Grease Runner
⑥	Bearing Washer
⑦	Insulation Bush

Mechanical Design

Bearings – Grease Lubricating Type Antifriction Bearings (For Belt Drive)

The figure below shows the structural drawing of an antifriction bearing which is applied to belt driven motors.
 Enclosure cooling: IC411 (TEFC)
 Frame: Fr.315



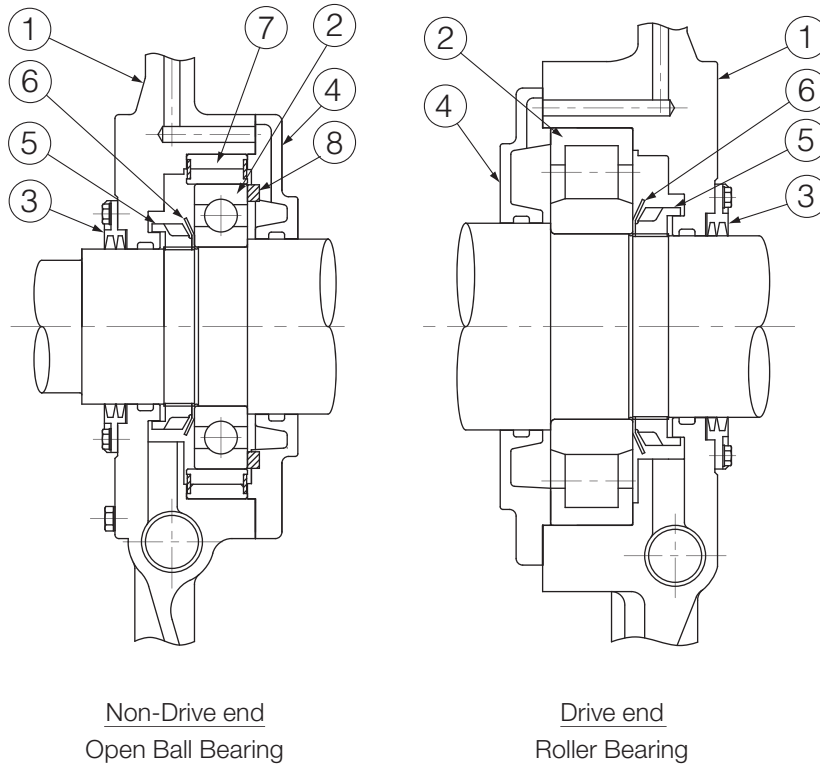
Part No.	Part Name
①	Bearing Bracket
②	Bearing
③	Labyrinth Seal
④	Inner Bearing Cover / Oil Seal
⑤	Grease Runner
⑥	Bearing Washer

1

Mechanical Design

Bearings – Grease Lubricating Type Antifriction Bearings (For Belt Drive)

The figure below shows the structural drawing of an antifriction bearing which is applied to belt driven motors.
 Enclosure cooling: IC411 (TEFC)
 Frame: Fr.355, Fr.400



Part No.	Part Name
①	Bearing Bracket
②	Bearing
③	Labyrinth Seal
④	Inner Bearing Cover / Oil Seal
⑤	Grease Runner
⑥	Bearing Washer
⑦	Insulation Bush
⑧	Insulation Bush

1

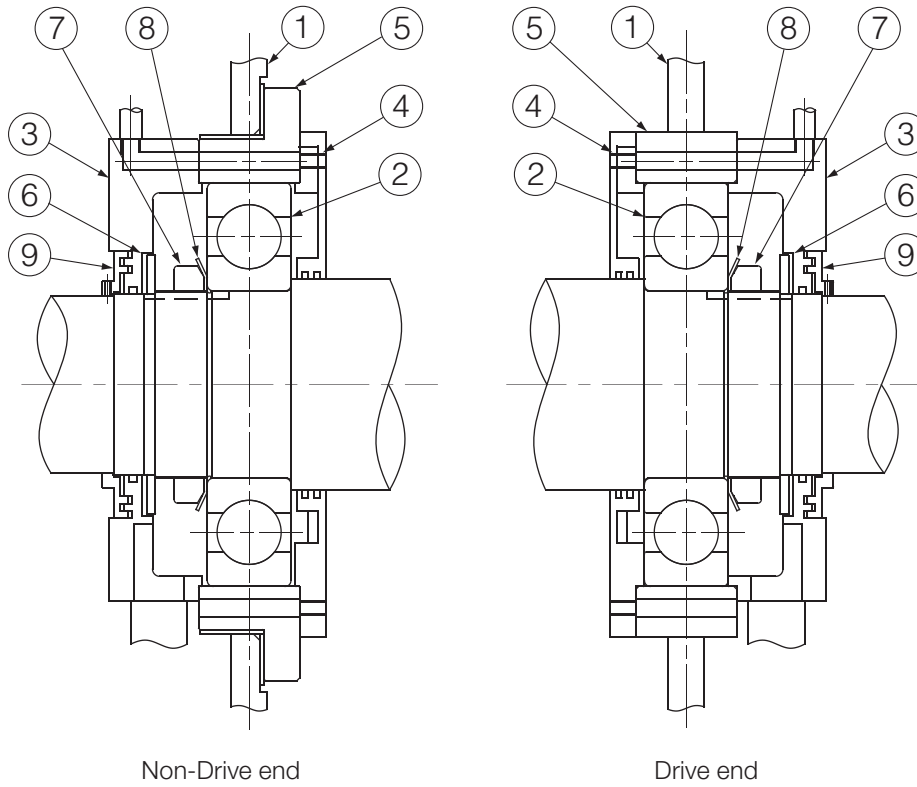
Mechanical Design

Bearings – Grease Lubricating Type Antifriction Bearings

The figure below shows the structural drawing for a grease lubricated antifriction bearing.

Enclosure cooling: IC01•IP24W (WPII), IC611 (TEAAC), IC81W (TEWAC)

Frame: Fr.400 to Fr.630



Part No.	Part Name
①	Bearing Bracket
②	Antifriction Bearing
③	Outside Slinger
④	Inside Slinger
⑤	Insulated Bearing Support
⑥	Grease Valve
⑦	Lock Nut
⑧	Lock Washer
⑨	Labyrinth Seal

1

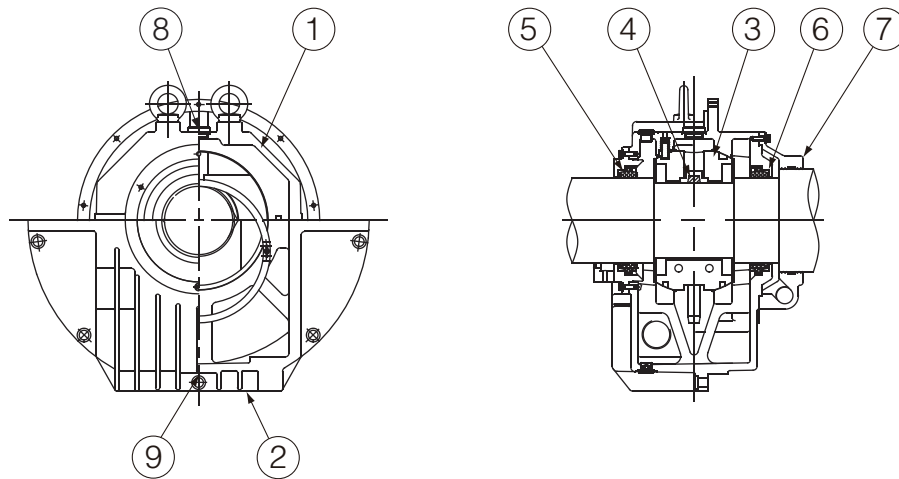
Mechanical Design

Bearings – Centrally Flange-mounted Type Sleeve Bearings

The figure below shows the structural drawing for a sleeve bearing.

Enclosure cooling: IC01•IP24W (WPII), IC611 (TEAAC), IC81W (TEWAC)

Frame: Fr.400 to Fr.630



Part No.	Part Name
①	Bearing Housing Upper Half
②	Bearing Housing Lower Half
③	Bearing Shell
④	Oil Ring
⑤	Outside Floating Seal
⑥	Inside Floating Seal
⑦	Machine Seal
⑧	Sight Glass
⑨	Drain Plug

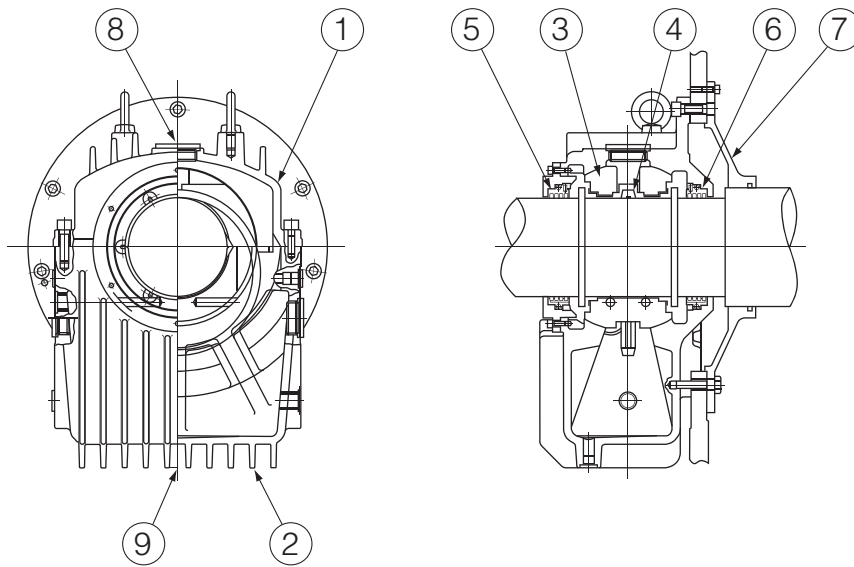
Mechanical Design

Bearings – Flange-mounted Type Sleeve Bearings

The figure below shows the structural drawing for a sleeve bearing.

Enclosure cooling: IC01•IP24W (WPII), IC611 (TEAAC), IC81W (TEWAC)

Frame: Fr.400 to Fr.630



Part No.	Part Name
①	Bearing Housing Upper Half
②	Bearing Housing Lower Half
③	Bearing Shell
④	Oil Ring
⑤	Outside Floating Seal
⑥	Inside Floating Seal
⑦	Machine Seal
⑧	Sight Glass
⑨	Drain Plug

1

Mechanical Design

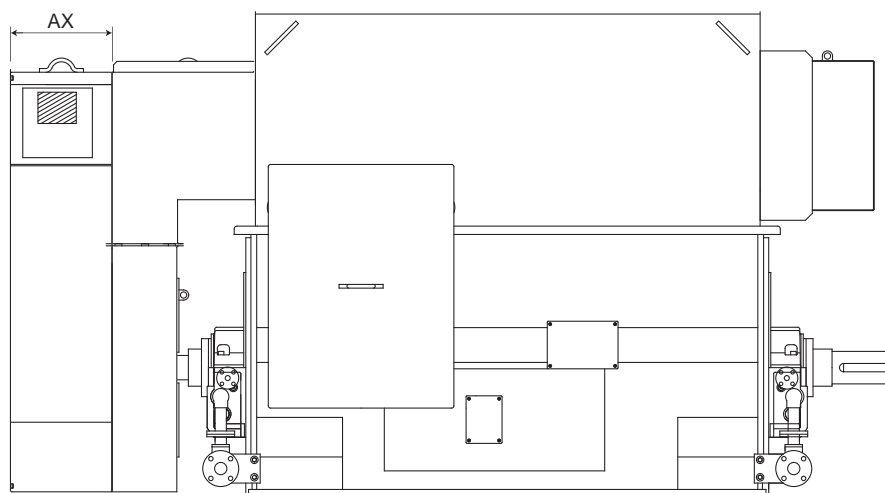
Silencer

The IC611 (TEAAC) and IC01•IP24W (WP II) are equipped with silencer when the lower sound pressure level is required.

The figure below shows the typical drawing of IC611 (TEAAC) with silencer and its extra axial dimensions.

Enclosure cooling: IC611 (TEAAC), IC01•IP24W (WP II)

Frame: Fr. 400 to Fr. 630



Frame No.	AX (mm)
400	360
450	410
500	460
560	460
630	460

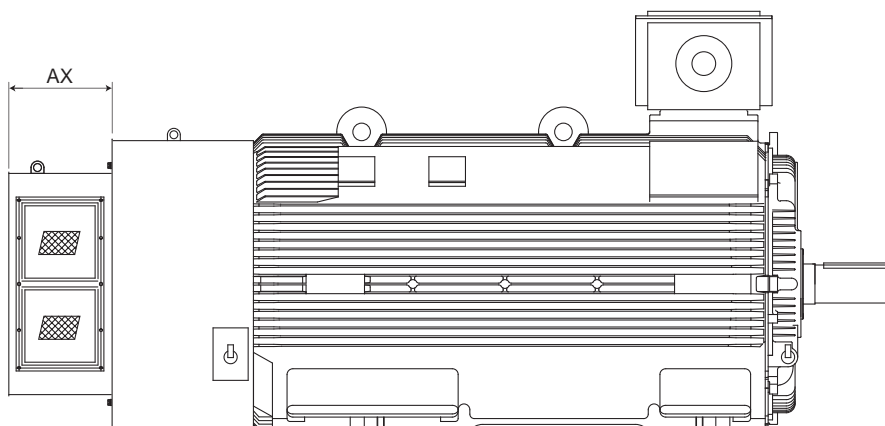
The AX in the table is a typical value.

The IC411 (TEFC) is equipped with silencer when the lower sound pressure level is required.

The figure below shows the typical drawing of IC411 (TEFC) with silencer and its extra axial dimensions.

Enclosure cooling: IC411 (TEFC)

Frame: Fr. 450 to Fr. 560



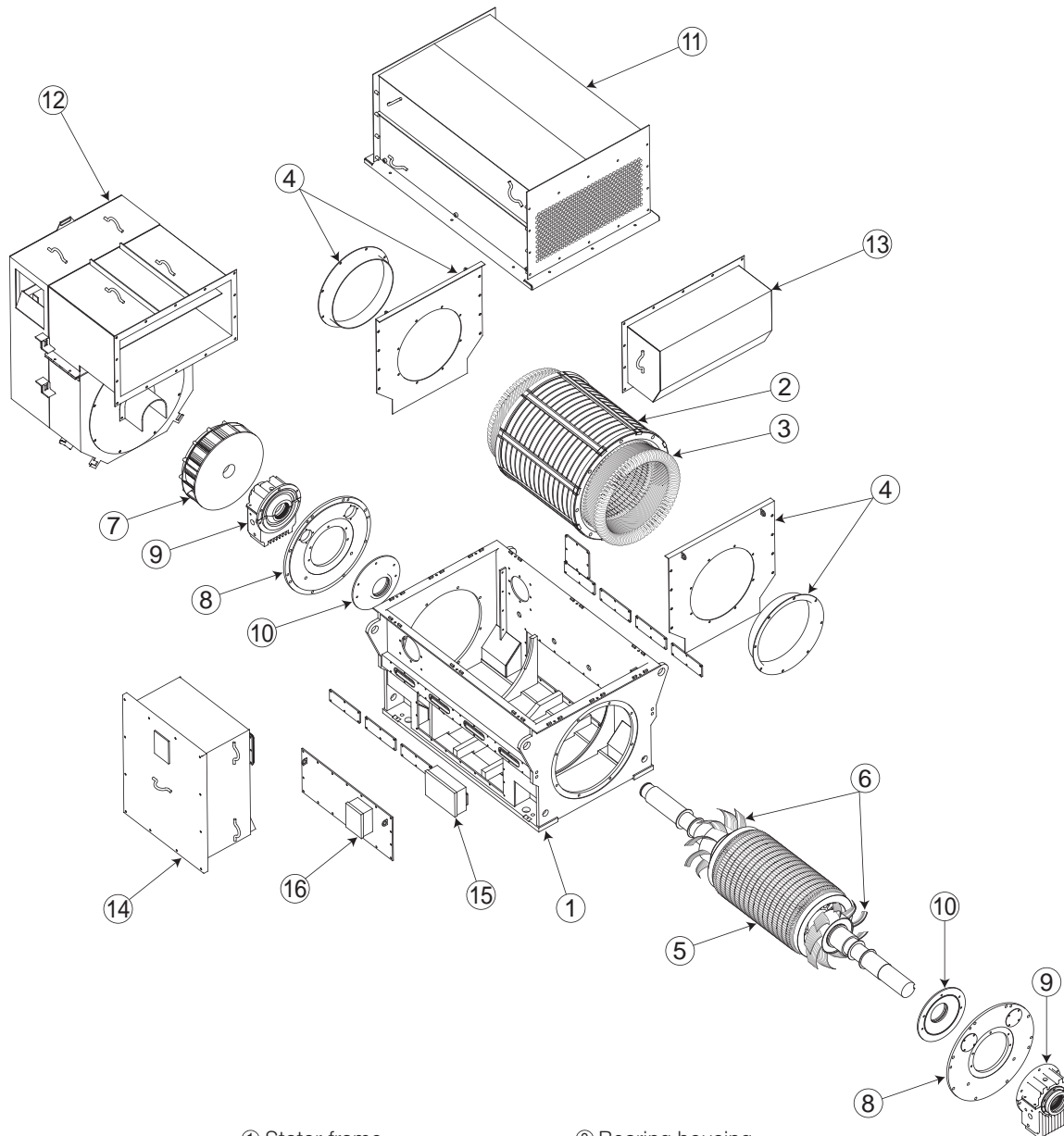
Frame No.	AX (mm)
450	347
500	347
560	347

The AX in the table is a typical value.

Mechanical Design

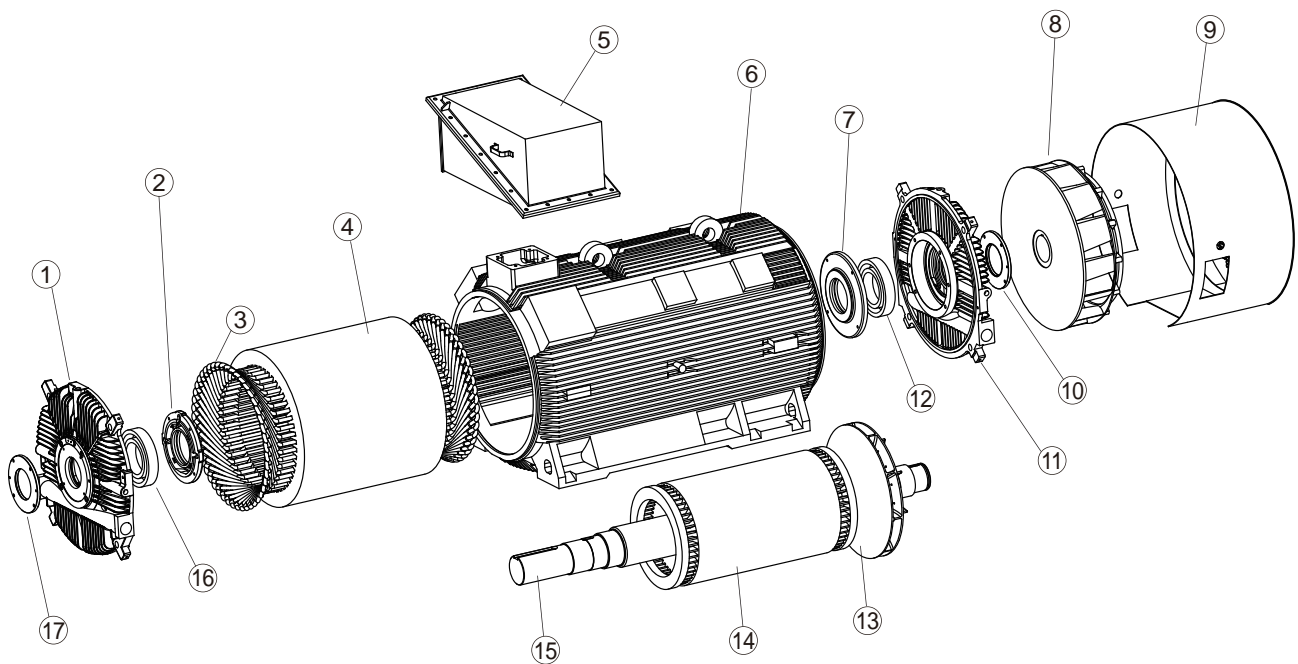
Motor Construction

The figure below shows the typical exploded view which is applied to motors below.
Enclosure cooling: IC611 (TEAAC)



- | | |
|-------------------|-----------------------------|
| ① Stator frame | ⑨ Bearing housing |
| ② Stator core | ⑩ Machine seal |
| ③ Stator winding | ⑪ Heat exchanger |
| ④ Air deflector | ⑫ Fan cover |
| ⑤ Rotor core | ⑬ Exhaust cover |
| ⑥ Internal fan | ⑭ Main terminal box |
| ⑦ External fan | ⑮ RTD terminal box |
| ⑧ Bearing bracket | ⑯ Space heater terminal box |

The figure below shows the typical exploded view which is applied to motors below.
Enclosure cooling: IC411 (TEFC)



- | | |
|-------------------------------|------------------------|
| ① Bearing bracket, DE | ⑪ Bearing bracket, NDE |
| ② Internal bearing cover, DE | ⑫ Bearing, NDE |
| ③ Stator coil | ⑬ Internal fan |
| ④ Stator core | ⑭ Rotor core |
| ⑤ Terminal box | ⑮ Shaft |
| ⑥ Frame | ⑯ Bearing, DE |
| ⑦ Internal bearing cover, NDE | ⑰ Labyrinth seal, DE |
| ⑧ External fan | |
| ⑨ Fan cover | |
| ⑩ Labyrinth seal, NDE | |

TMEiC THREE PHASE INDUCTION MOTOR

RATED OUTPUT	kW	POLES
TYPE		FRAME NO.
RATED VOLTAGE	V	THERMAL CLASS
RATED CURRENT	A	RATING
RATED FREQUENCY	Hz	MAX. AMB. °C
RATED SPEED	min ⁻¹	STANDARD
RATED POWER FACTOR		
PROTECTION	BEARING	DE
COOLING METHOD		NDE
SERIAL NO.	MANUFACTURED IN	

TOSHIBA MITSUBISHI-ELECTRIC INDUSTRIAL SYSTEMS CORPORATION



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Standard Conditions 26

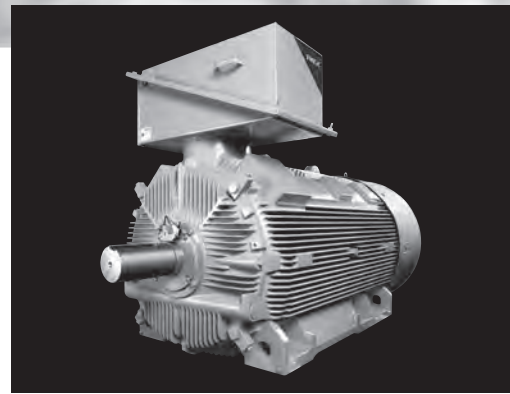
Right to repair

From 2018, a right to repair will be introduced for certain products. This means that consumers will be able to have their products repaired by a third party, rather than the manufacturer or retailer. This will help to reduce costs and increase competition in the repair market.

Right to repair

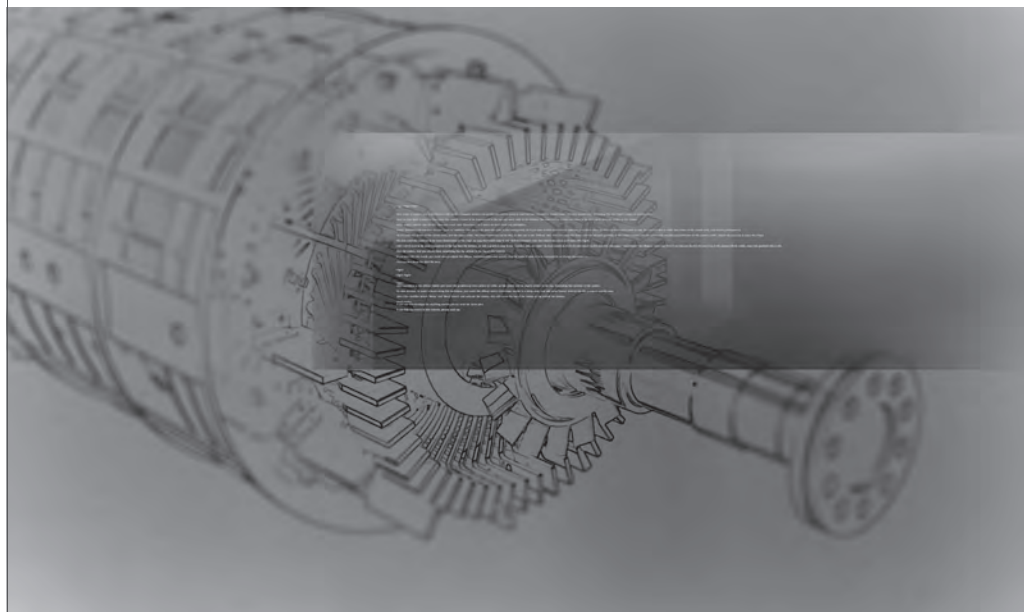
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All ratings in this catalogue are designed for the following:

- Installation altitude of the motor $\leq 1000\text{m}$ above sea level
- Ambient temperature (= coolant temperature for air-cooled motors) = 40°C
- Cooling water temperature for water-cooled motors = 25°C
- Thermal class 155 (F) utilized to 130 (B)
- Continuous operation S1
- Permissible tolerances in compliance with IEC/EN 60034-1:
 - Rated voltage $V_{\text{rated}} \pm 5\%$
 - Rated frequency $f_{\text{rated}} \pm 2\%$
- All data presented in this catalog are typical values. Guaranteed values are available on request. All motors are optimized for the specified application. Accurate motor data will be given on request at quotation phase. Legally binding performance and specification data is given to the end user once each order is confirmed.
- With the value specified in the selection and ordering data for the maximum permissible external moment of inertia, start-up is possible two times from cold or one time from warm, assuming that the motor coasts down naturally between starts.
- Please provide load data and starting requirements to TMEIC for final design confirmation.
- Specification data and main dimensions not presented in this catalog will be given on request at quotation phase.



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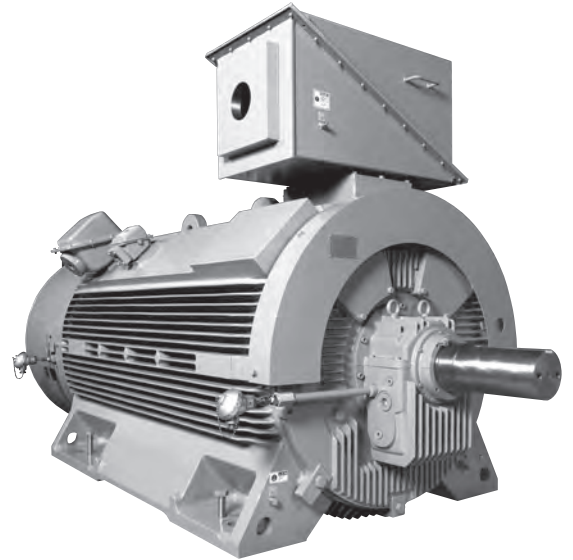
Technical Data

IC411 (TEFC – Totally Enclosed Fan-Cooled)

Air-cooled motors

■ Technical data

IC411 (TEFC)	
Rated voltage	Up to 6.6kV
Rated frequency	50/60Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3
Degree of protection	IP55
Cooling method	IC411/IC416
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height	315 to 560mm
Bearings	Antifriction bearings
Cage material	Aluminum or copper
Frame material	Cast iron
Standards	IEC, NEMA, JEC



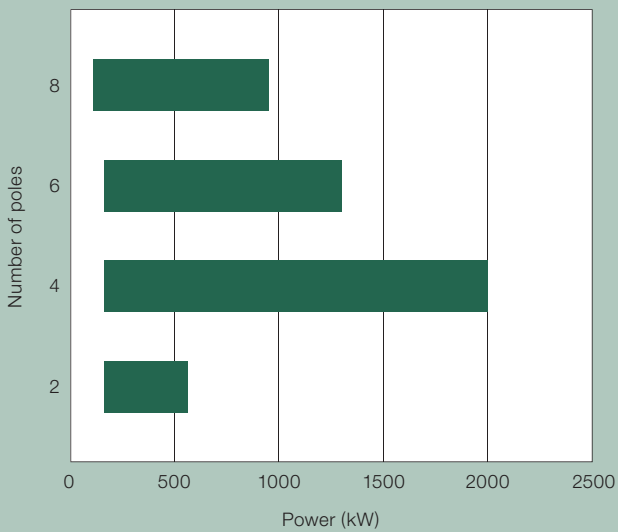
■ Power range – Shaft height: 315 to 560mm

Insulation system, thermal class: 155 (F), utilized to 130 (B).

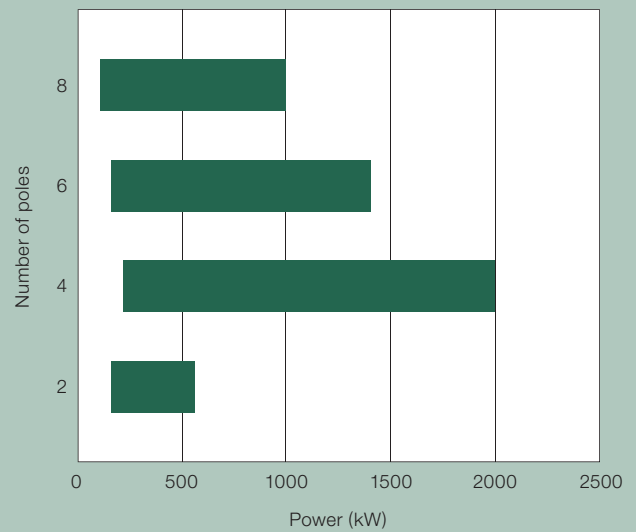
Ambient temperature: up to 40°C

Installation altitude: up to 1000m

3.3 to 6.6kV, 50Hz



3.3 to 6.6kV, 60Hz



3

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm ²	External max. kgm ²		
3.3kV, 50Hz																		
2-pole																		
160	315H	GFF1	-	-	2967	34	94.6	94.3	0.88	0.86	515	2.4	1.1	6.8	1.4	12	1450	85
185	315H	GFF1	-	-	2966	39	94.7	94.5	0.89	0.87	595	2.3	1.1	6.7	1.5	13	1450	85
200	315H	GFF1	-	-	2967	42	94.8	94.6	0.89	0.87	644	2.4	1.1	6.8	1.6	14	1520	85
220	315H	GFF1	-	-	2967	46	94.9	94.8	0.89	0.88	708	2.3	1.1	6.7	1.8	15	1590	85
250	315H	GFF1	-	-	2967	52	95.0	94.9	0.89	0.88	804	2.3	1.1	6.6	2.0	17	1660	85
280	355H	GFF1	-	-	2974	58	95.0	94.6	0.89	0.87	899	2.5	0.8	7.0	3.9	19	2130	85
300	355H	GFF1	-	-	2972	62	95.0	94.6	0.89	0.88	964	2.3	0.7	6.5	3.8	20	2130	85
315	355H	GFF1	-	-	2975	65	95.2	94.8	0.90	0.88	1011	2.5	0.8	6.7	4.3	21	2210	85
355	355H	GFF1	-	-	2974	73	95.4	95.1	0.90	0.88	1139	2.5	0.8	6.6	5.2	23	2390	85
400	355H	GFF1	-	-	2977	82	95.5	95.2	0.90	0.88	1283	2.6	0.9	7.2	5.6	26	2470	85
450	400H	GFF1	-	-	2978	92	95.8	95.5	0.90	0.88	1442	2.3	0.8	6.4	9.1	28	3120	85
500	400H	GFF1	-	-	2978	102	96.1	95.8	0.90	0.88	1603	2.3	0.8	6.6	10	31	3240	85
530	400H	GFF1	-	-	2979	108	96.2	96.0	0.90	0.88	1698	2.4	0.8	6.9	11	33	3360	85
560	400H	GFF1	-	-	2979	114	96.4	96.1	0.90	0.88	1795	2.6	0.9	7.3	11	34	3470	85
4-pole																		
160	315H	GFF1	-	-	1482	35	92.7	92.4	0.87	0.84	1030	2.2	1.0	6.1	2.4	56	1420	85
185	315H	GFF1	-	-	1481	40	93.0	92.9	0.88	0.86	1192	2.1	1.0	5.7	2.7	63	1420	85
200	315H	GFF1	-	-	1482	43	93.3	93.1	0.87	0.85	1288	2.2	1.0	5.9	2.8	68	1480	85
220	315H	GFF1	-	-	1487	48	94.0	93.4	0.87	0.83	1412	2.8	1.2	7.1	4.3	83	1480	85
250	315H	GFF1	-	-	1485	54	94.2	93.8	0.86	0.83	1607	2.6	1.1	6.6	3.7	83	1610	85
280	315H	GFF1	-	-	1487	60	94.4	93.9	0.87	0.83	1797	2.8	1.2	6.9	4.6	92	1740	85
300	315H	GFF1	-	-	1488	65	94.4	93.8	0.86	0.81	1924	2.8	1.2	7.4	4.7	98	1740	85
315	355H	GFF1	-	-	1486	67	94.5	94.1	0.87	0.84	2023	2.7	1.0	6.6	5.9	102	2280	85
355	355H	GFF1	-	-	1485	75	94.9	94.6	0.88	0.86	2281	2.5	1.0	6.1	6.6	114	2360	85
400	355H	GFF1	-	-	1487	84	95.2	94.9	0.88	0.85	2568	2.7	1.1	6.9	8.0	126	2520	85
450	355H	GFF1	-	-	1487	94	95.5	95.2	0.88	0.86	2889	2.7	1.1	7.0	8.9	140	2610	85
500	400H	GFF1	-	-	1489	105	95.7	95.3	0.88	0.85	3206	2.8	1.1	6.6	12	153	3080	85
530	400H	GFF1	-	-	1489	110	95.8	95.4	0.88	0.86	3398	2.7	1.1	6.8	13	161	3180	85
560	400H	GFF1	-	-	1489	116	96.0	95.6	0.89	0.86	3590	2.8	1.1	7.0	14	169	3280	85
600	400H	GFF1	-	-	1489	124	96.0	95.7	0.89	0.86	3846	2.8	1.1	6.9	16	180	3380	85
630	400H	GFF1	-	-	1490	130	96.1	95.7	0.89	0.85	4037	2.8	1.2	7.4	17	187	3480	85
650	400H	GFF1	-	-	1489	134	96.2	95.8	0.89	0.86	4166	2.8	1.2	7.3	17	192	3480	85
710	450	GFF1	-	-	1491	146	96.2	95.9	0.89	0.87	4545	2.5	0.8	6.2	28	207	4450	85
750	450	GFF1	-	-	1492	154	96.4	96.0	0.89	0.87	4800	2.5	0.8	6.6	30	217	4590	85
800	450	GFF1	-	-	1491	163	96.4	96.1	0.89	0.87	5122	2.4	0.8	6.5	30	229	4590	85
850	450	GFF1	-	-	1491	173	96.5	96.2	0.89	0.87	5440	2.6	0.8	6.4	32	241	4730	85
900	450	GFF1	-	-	1492	183	96.7	96.3	0.89	0.87	5758	2.7	0.8	7.0	34	253	4870	85
950	450	GFF1	-	-	1492	192	96.8	96.4	0.89	0.87	6076	2.8	0.8	7.3	39	264	5150	85
1000	450	GFF1	-	-	1492	202	96.8	96.5	0.90	0.88	6398	2.7	0.8	6.8	39	276	5150	85
1120	500	GFF1	-	-	1490	225	97.1	96.8	0.90	0.88	7174	2.4	0.8	6.2	55	302	6750	85
1250	500	GFF1	-	-	1491	250	97.2	97.0	0.90	0.89	8001	2.6	0.8	7.1	65	330	7350	85
1300	500	GFF1	-	-	1491	259	97.3	97.0	0.90	0.89	8323	2.5	0.8	6.4	65	341	7350	85
1400	500	GFF1	-	-	1492	280	97.3	97.1	0.90	0.88	8959	2.6	0.9	7.0	69	362	7550	85
1500	560	GFF1	-	-	1492	300	97.5	97.3	0.90	0.88	9598	2.7	0.8	6.9	80	382	8300	85
1600	560	GFF1	-	-	1492	319	97.6	97.4	0.90	0.87	10233	2.8	0.8	6.8	89	401	8800	85
1800	560	GFF1	-	-	1492	360	97.8	97.6	0.90	0.87	11513	2.8	0.8	7.0	104	439	9550	85
2000	560	GFF1	-	-	1492	399	97.8	97.6	0.90	0.87	12792	2.8	0.8	7.3	109	475	9800	85

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm^2	External max. kgm^2		
3.3kV, 50Hz																		
6-pole																		
160	315H	GFF1	-	-	991	38	93.1	92.5	0.80	0.75	1541	2.3	0.9	5.7	5.7	149	1710	83
185	315H	GFF1	-	-	989	43	93.1	92.9	0.82	0.78	1785	2.0	0.8	5.3	5.7	171	1710	83
200	315H	GFF1	-	-	990	47	93.4	93.1	0.81	0.77	1929	2.1	0.9	5.7	6.2	183	1780	83
220	355H	GFF1	-	-	988	50	94.0	94.0	0.82	0.78	2125	2.0	1.0	5.4	7.5	200	2260	83
250	355H	GFF1	-	-	988	57	94.3	94.2	0.82	0.79	2414	2.1	1.0	5.5	8.3	225	2260	83
280	355H	GFF1	-	-	988	63	94.6	94.5	0.83	0.79	2704	2.1	1.0	5.8	10	249	2420	83
300	355H	GFF1	-	-	990	68	94.8	94.7	0.82	0.78	2894	2.2	1.0	5.7	12	265	2580	83
315	355H	GFF1	-	-	989	71	94.8	94.7	0.83	0.79	3040	2.1	1.0	5.8	12	277	2580	83
355	400H	GFF1	-	-	992	80	95.1	94.7	0.82	0.77	3414	2.3	1.1	6.4	16	308	3070	84
400	400H	GFF1	-	-	992	89	95.4	95.1	0.83	0.79	3851	2.0	1.0	5.4	19	343	3270	84
450	400H	GFF1	-	-	992	100	95.5	95.3	0.83	0.79	4332	2.1	1.0	5.7	20	381	3380	84
500	400H	GFF1	-	-	992	112	95.6	95.3	0.82	0.78	4811	2.2	1.1	6.2	22	419	3480	84
530	400H	GFF1	-	-	993	118	95.7	95.2	0.82	0.77	5095	2.4	1.2	6.5	23	441	3580	84
560	450	GFF1	-	-	994	124	95.9	95.4	0.82	0.78	5377	2.8	0.9	6.6	41	463	4680	85
600	450	GFF1	-	-	994	132	95.9	95.5	0.83	0.79	5763	2.7	0.9	6.4	41	492	4680	85
630	450	GFF1	-	-	994	139	96.1	95.8	0.83	0.79	6051	2.6	0.9	6.6	46	514	4960	85
650	450	GFF1	-	-	994	143	96.1	95.8	0.83	0.80	6245	2.5	0.9	6.0	46	528	4960	85
710	450	GFF1	-	-	994	156	96.2	95.9	0.83	0.80	6821	2.6	0.8	6.2	49	570	5100	85
750	450	GFF1	-	-	994	162	96.3	95.9	0.84	0.80	7202	2.6	0.9	6.9	52	598	5240	85
800	500	GFF1	-	-	993	174	96.3	95.8	0.84	0.80	7687	2.5	0.8	5.9	60	633	6550	85
850	500	GFF1	-	-	994	185	96.3	95.8	0.84	0.80	8166	2.5	0.8	6.1	64	667	6750	85
900	500	GFF1	-	-	994	196	96.4	96.0	0.84	0.80	8645	2.5	0.8	6.6	68	701	6950	85
950	500	GFF1	-	-	994	207	96.5	96.0	0.83	0.79	9122	2.7	0.9	6.4	72	734	7150	85
1000	500	GFF1	-	-	994	217	96.6	96.2	0.84	0.80	9600	2.7	0.9	6.6	81	767	7350	85
1120	560	GFF1	-	-	995	247	96.9	96.6	0.82	0.77	10747	2.7	0.8	6.8	108	844	8800	85
1250	560	GFF1	-	-	995	275	97.1	96.8	0.82	0.77	11994	2.6	0.8	6.2	121	926	9300	85
1300	560	GFF1	-	-	995	287	97.1	96.8	0.82	0.77	12469	2.8	0.8	6.7	133	957	9800	85

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm^2	External max. kgm^2		
3.3kV, 50Hz																		
8-pole																		
110	315H	GFF1	-	-	742	28	91.4	90.7	0.77	0.71	1415	2.3	1.0	6.3	5.7	213	1620	81
132	315H	GFF1	-	-	741	33	91.8	91.4	0.78	0.72	1699	2.2	1.0	6.2	6.3	252	1680	81
150	315H	GFF1	-	-	741	37	92.2	91.8	0.78	0.72	1931	2.2	1.0	6.5	6.9	283	1750	81
160	355H	GFF1	-	-	742	39	92.6	92.3	0.78	0.72	2059	2.0	0.9	5.8	9.1	301	2230	81
185	355H	GFF1	-	-	742	45	92.9	92.6	0.78	0.72	2381	2.0	1.0	6.0	10	344	2310	81
200	355H	GFF1	-	-	742	48	93.3	93.0	0.78	0.74	2573	2.1	1.0	6.3	12	369	2470	81
220	355H	GFF1	-	-	742	53	93.6	93.2	0.78	0.73	2829	2.1	1.0	6.1	13	403	2550	81
250	400H	GFF1	-	-	743	62	94.0	93.6	0.76	0.72	3210	2.0	1.0	5.3	13	453	2840	83
280	400H	GFF1	-	-	744	69	94.1	93.7	0.76	0.72	3594	2.0	1.0	5.7	15	503	3940	83
300	400H	GFF1	-	-	744	72	94.1	93.8	0.78	0.74	3850	2.0	1.0	5.3	18	536	3140	83
315	400H	GFF1	-	-	744	75	94.4	94.0	0.78	0.74	4042	2.0	1.0	5.7	19	560	3250	83
355	400H	GFF1	-	-	744	86	94.6	94.1	0.77	0.72	4552	2.1	1.1	6.3	22	624	3450	83
400	400H	GFF1	-	-	744	97	94.8	94.3	0.76	0.71	5129	2.0	1.0	5.8	24	696	3560	83
450	450	GFF1	-	-	744	105	95.0	94.8	0.79	0.76	5773	2.0	0.8	5.3	44	774	4680	83
500	450	GFF1	-	-	745	118	95.3	94.9	0.78	0.74	6406	2.3	0.8	5.2	50	851	4960	83
530	450	GFF1	-	-	745	125	95.5	95.1	0.78	0.73	6788	2.4	0.8	5.5	56	896	5240	83
560	450	GFF1	-	-	745	131	95.5	95.2	0.79	0.74	7175	2.3	0.8	5.6	56	942	5240	83
600	450	GFF1	-	-	746	142	95.9	95.5	0.77	0.72	7678	2.4	0.8	5.5	75	1002	6750	83
630	450	GFF1	-	-	746	149	96.0	95.5	0.77	0.71	8060	2.4	0.8	5.7	79	1046	6950	83
650	500	GFF1	-	-	746	153	96.0	95.6	0.78	0.72	8317	2.4	0.8	5.9	79	1076	6950	83
710	500	GFF1	-	-	746	167	96.1	95.8	0.78	0.73	9088	2.3	0.8	5.2	89	1163	7350	83
750	500	GFF1	-	-	746	178	96.2	95.8	0.77	0.72	9597	2.3	0.8	5.5	94	1221	7550	83
800	560	GFF1	-	-	746	191	96.4	96.2	0.76	0.70	10230	2.4	0.8	5.6	118	1293	8550	83
850	560	GFF1	-	-	747	203	96.5	96.3	0.76	0.70	10868	2.4	0.8	5.2	125	1364	8800	83
900	560	GFF1	-	-	747	214	96.6	96.4	0.76	0.71	11507	2.3	0.8	5.3	139	1434	9300	83
950	560	GFF1	-	-	747	225	96.7	96.5	0.77	0.71	12146	2.4	0.8	5.5	153	1503	9800	83

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm ²	External max. kgm ²		
3.3kV, 60Hz																		
2-pole																		
160	315H	GFF1	-	-	3564	34	94.1	93.6	0.88	0.86	428	2.3	1.0	6.6	1.2	7	1370	87
185	315H	GFF1	-	-	3563	39	94.4	94.0	0.88	0.87	496	2.2	1.0	6.4	1.3	8	1370	87
200	315H	GFF1	-	-	3563	42	94.6	94.3	0.89	0.87	536	2.3	1.1	6.5	1.4	9	1450	87
220	315H	GFF1	-	-	3564	46	94.9	94.5	0.89	0.88	589	2.2	1.0	6.4	1.6	10	1520	87
250	315H	GFF1	-	-	3568	52	95.0	94.6	0.89	0.88	669	2.4	1.2	6.9	2.0	11	1660	87
280	355H	GFF1	-	-	3575	58	95.1	94.4	0.89	0.87	748	2.6	0.7	7.2	3.9	12	2130	87
300	355H	GFF1	-	-	3573	62	95.1	94.4	0.90	0.88	802	2.4	0.7	6.7	3.9	13	2130	87
315	355H	GFF1	-	-	3574	65	95.2	94.7	0.89	0.88	841	2.5	0.8	6.6	4.7	13	2300	87
355	355H	GFF1	-	-	3575	73	95.4	94.9	0.90	0.89	948	2.6	0.8	6.7	5.6	15	2470	87
400	355H	GFF1	-	-	3576	82	95.6	95.2	0.90	0.88	1068	2.6	0.8	7.0	5.6	16	2470	87
450	400H	GFF1	-	-	3578	92	96.0	95.6	0.90	0.89	1200	2.4	0.7	6.5	11	18	3360	87
500	400H	GFF1	-	-	3579	101	96.4	96.0	0.90	0.89	1334	2.4	0.8	6.9	11	20	3470	87
530	400H	GFF1	-	-	3578	107	96.4	96.1	0.90	0.89	1414	2.2	0.7	6.4	11	20	3470	87
560	400H	GFF1	-	-	3579	114	96.5	96.1	0.90	0.88	1494	2.6	0.8	7.4	11	21	3470	87
4-pole																		
220	315H	GFF1	-	-	1783	48	93.9	93.5	0.87	0.84	1178	2.2	1.0	6.2	2.5	47	1420	87
250	315H	GFF1	-	-	1784	53	94.5	94.1	0.88	0.85	1337	2.4	1.1	6.7	3.3	53	1550	87
280	315H	GFF1	-	-	1787	60	94.6	94.0	0.86	0.82	1496	2.8	1.1	7.7	3.9	59	1610	87
300	315H	GFF1	-	-	1787	64	94.8	94.2	0.87	0.83	1603	2.8	1.1	6.9	4.3	62	1680	87
315	315H	GFF1	-	-	1787	67	95.0	94.3	0.87	0.83	1682	2.8	1.2	7.6	4.7	65	1740	87
355	355H	GFF1	-	-	1785	75	94.9	94.5	0.88	0.85	1898	2.6	1.0	6.1	5.3	72	2200	87
400	355H	GFF1	-	-	1786	83	95.4	95.0	0.89	0.87	2138	2.6	1.0	6.6	6.9	80	2360	87
450	355H	GFF1	-	-	1786	93	95.6	95.2	0.89	0.87	2405	2.7	1.0	6.8	7.6	89	2440	87
500	355H	GFF1	-	-	1785	102	95.9	95.5	0.90	0.88	2673	2.7	1.0	6.6	8.9	97	2610	87
530	400H	GFF1	-	-	1788	110	96.0	95.5	0.89	0.86	2829	2.6	1.1	6.5	11	102	3080	87
560	400H	GFF1	-	-	1788	115	96.1	95.7	0.89	0.87	2989	2.6	1.0	6.7	13	107	3180	87
600	400H	GFF1	-	-	1788	122	96.2	95.8	0.90	0.88	3203	2.7	1.0	6.5	14	114	3280	87
630	400H	GFF1	-	-	1788	128	96.4	96.0	0.90	0.88	3363	2.6	1.1	6.7	16	118	3380	87
650	400H	GFF1	-	-	1789	132	96.4	95.9	0.90	0.87	3468	2.8	1.1	7.4	17	122	3480	87
710	450	GFF1	-	-	1791	145	96.4	95.9	0.89	0.87	3783	2.6	0.7	6.7	26	131	4310	89
750	450	GFF1	-	-	1791	154	96.4	96.0	0.89	0.86	3997	2.4	0.7	6.5	26	137	4310	89
800	450	GFF1	-	-	1791	164	96.6	96.1	0.89	0.87	4263	2.5	0.7	6.9	28	144	4450	89
850	450	GFF1	-	-	1791	172	96.8	96.4	0.90	0.88	4529	2.5	0.7	6.3	32	152	4730	89
900	450	GFF1	-	-	1791	182	96.8	96.5	0.90	0.88	4797	2.3	0.7	6.1	32	159	4730	89
950	450	GFF1	-	-	1791	191	96.9	96.6	0.90	0.89	5062	2.5	0.7	6.7	36	166	5010	89
1000	450	GFF1	-	-	1791	200	97.0	96.7	0.90	0.89	5330	2.4	0.7	5.9	36	173	5010	89
1120	500	GFF1	-	-	1788	226	97.0	96.8	0.90	0.89	5979	2.2	0.7	5.2	45	190	6150	90
1250	500	GFF1	-	-	1790	252	97.2	96.9	0.89	0.88	6666	2.4	0.8	6.1	48	207	6350	90
1300	500	GFF1	-	-	1789	262	97.2	97.0	0.90	0.88	6935	2.3	0.7	5.7	48	213	6350	90
1400	500	GFF1	-	-	1789	280	97.4	97.1	0.90	0.89	7468	2.2	0.7	5.8	55	225	6750	90
1500	500	GFF1	-	-	1789	298	97.5	97.2	0.90	0.89	8003	2.3	0.8	6.3	62	237	7150	90
1600	500	GFF1	-	-	1790	318	97.6	97.3	0.91	0.89	8533	2.4	0.8	6.2	69	249	7550	90
1800	560	GFF1	-	-	1791	358	97.8	97.6	0.90	0.89	9595	2.3	0.7	5.8	89	272	8800	90
2000	560	GFF1	-	-	1792	399	97.8	97.5	0.90	0.88	10653	2.6	0.8	6.9	109	293	9800	90

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm ²	External max. kgm ²		
3.3kV, 60Hz																		
6-pole																		
160	315H	GFF1	-	-	1190	38	93.1	92.6	0.81	0.76	1283	2.1	0.8	5.4	4.3	96	1580	87
185	315H	GFF1	-	-	1189	43	93.3	92.9	0.81	0.77	1485	2.1	0.9	5.5	4.6	109	1580	87
200	315H	GFF1	-	-	1190	47	93.6	93.2	0.81	0.76	1605	2.1	0.9	5.9	5.2	117	1650	87
220	315H	GFF1	-	-	1190	51	93.9	93.5	0.80	0.76	1765	2.1	0.8	5.7	5.7	128	1710	87
250	355H	GFF1	-	-	1188	57	94.5	94.3	0.82	0.78	2008	2.0	1.1	5.5	7.0	144	2180	87
280	355H	GFF1	-	-	1189	64	94.6	94.3	0.82	0.77	2247	2.2	1.1	6.3	8.7	159	2340	87
300	355H	GFF1	-	-	1190	68	94.8	94.5	0.82	0.78	2407	2.2	1.1	5.8	10	169	2420	87
315	355H	GFF1	-	-	1189	71	94.8	94.6	0.82	0.79	2529	2.1	1.1	5.8	10	177	2420	87
355	355H	GFF1	-	-	1189	80	95.1	94.9	0.82	0.78	2850	2.3	1.1	6.6	12	197	2580	87
400	400H	GFF1	-	-	1192	92	95.3	94.8	0.80	0.75	3203	2.2	1.1	5.8	14	219	2970	88
450	400H	GFF1	-	-	1192	103	95.5	95.1	0.81	0.76	3604	2.2	1.1	6.0	16	243	3070	88
500	400H	GFF1	-	-	1192	111	95.8	95.4	0.83	0.79	4005	2.1	1.1	6.1	19	267	3270	88
530	400H	GFF1	-	-	1192	120	95.9	95.4	0.81	0.77	4243	2.3	1.2	6.4	20	281	3380	88
560	400H	GFF1	-	-	1191	123	96.0	95.7	0.83	0.80	4487	2.1	1.1	5.1	22	295	3480	88
600	400H	GFF1	-	-	1192	135	95.9	95.4	0.81	0.77	4803	2.4	1.2	5.9	23	313	3580	88
630	450	GFF1	-	-	1193	141	96.1	95.7	0.81	0.76	5039	2.6	0.7	6.4	32	327	4260	88
650	450	GFF1	-	-	1194	145	96.2	95.7	0.82	0.77	5198	2.7	0.8	6.3	35	336	4400	88
710	450	GFF1	-	-	1193	154	96.3	95.9	0.84	0.80	5679	2.5	0.8	6.1	41	362	4680	88
750	450	GFF1	-	-	1194	163	96.4	96.0	0.84	0.80	5997	2.6	0.8	6.8	44	380	4820	88
800	450	GFF1	-	-	1193	172	96.4	96.0	0.85	0.81	6400	2.6	0.8	6.3	49	401	5100	88
850	500	GFF1	-	-	1193	184	96.6	96.0	0.84	0.80	6799	2.6	0.7	6.1	52	423	6150	88
900	500	GFF1	-	-	1194	198	96.6	96.1	0.83	0.78	7198	2.5	0.8	6.5	56	444	6350	88
950	500	GFF1	-	-	1194	205	96.7	96.2	0.84	0.80	7598	2.5	0.8	5.9	64	465	6750	88
1000	500	GFF1	-	-	1194	215	96.7	96.3	0.84	0.81	7997	2.5	0.7	6.1	72	485	7150	88
1120	560	GFF1	-	-	1195	245	97.1	96.7	0.83	0.76	8947	2.8	0.8	7.0	84	533	7800	88
1250	560	GFF1	-	-	1195	271	97.3	96.9	0.83	0.78	9987	2.6	0.7	6.3	96	584	8300	88
1300	560	GFF1	-	-	1195	281	97.4	97.0	0.83	0.78	10384	2.8	0.8	6.7	108	603	8800	88
1400	560	GFF1	-	-	1195	299	97.5	97.2	0.84	0.79	11181	2.7	0.8	6.5	127	641	9550	88

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm^2	External max. kgm^2		
3.3kV, 60Hz																		
8-pole																		
110	315H	GFF1	-	-	893	28	91.5	90.6	0.76	0.69	1176	2.4	1.0	6.5	4.6	137	1550	84
132	315H	GFF1	-	-	892	33	92.0	91.3	0.76	0.70	1413	2.3	1.0	6.5	5.1	162	1550	84
150	315H	GFF1	-	-	892	37	92.4	91.8	0.77	0.71	1606	2.3	1.1	6.7	5.7	182	1620	84
160	315H	GFF1	-	-	891	39	92.9	92.4	0.78	0.73	1713	2.2	1.0	6.1	6.9	193	1750	84
185	355H	GFF1	-	-	890	45	93.0	92.9	0.79	0.76	1984	2.0	0.9	5.2	7.9	221	2150	84
200	355H	GFF1	-	-	891	48	93.7	93.4	0.79	0.75	2143	2.0	1.0	5.9	10	259	2310	84
220	355H	GFF1	-	-	892	53	93.8	93.4	0.78	0.73	2354	2.1	1.0	6.1	11	259	2390	84
250	355H	GFF1	-	-	892	60	93.9	93.5	0.78	0.73	2674	2.1	1.1	6.6	13	291	2550	84
280	400H	GFF1	-	-	894	68	94.3	93.7	0.77	0.72	2991	2.0	0.9	5.7	12	322	2840	86
300	400H	GFF1	-	-	894	72	94.3	93.8	0.78	0.73	3204	2.1	1.0	5.4	14	343	3940	86
315	400H	GFF1	-	-	894	75	94.4	93.9	0.78	0.73	3363	2.1	1.0	5.9	16	359	3040	86
355	400H	GFF1	-	-	894	86	94.6	94.1	0.77	0.72	3791	2.0	1.0	6.0	17	399	3140	86
400	400H	GFF1	-	-	894	96	95.0	94.4	0.77	0.73	4270	2.1	1.0	5.7	21	445	3350	86
450	400H	GFF1	-	-	894	106	95.5	95.0	0.78	0.75	4805	2.0	1.0	5.8	24	494	3560	86
500	450	GFF1	-	-	894	116	95.8	95.4	0.79	0.75	5338	2.0	0.6	4.7	38	543	4400	86
530	450	GFF1	-	-	895	124	95.9	95.4	0.78	0.74	5656	2.2	0.7	5.1	41	572	4540	86
560	450	GFF1	-	-	895	130	96.0	95.6	0.79	0.75	5974	2.3	0.7	5.5	47	601	4820	86
600	450	GFF1	-	-	895	139	96.1	95.6	0.79	0.74	6397	2.3	0.7	5.4	53	639	5100	86
630	500	GFF1	-	-	896	150	96.3	95.7	0.77	0.70	6709	2.7	0.8	6.1	70	667	6550	86
650	500	GFF1	-	-	896	157	96.4	95.8	0.76	0.69	6923	2.7	0.8	6.3	70	686	6550	86
710	500	GFF1	-	-	896	170	96.5	95.9	0.76	0.70	7562	2.6	0.8	5.9	75	741	6750	86
750	500	GFF1	-	-	896	177	96.6	96.1	0.77	0.71	7987	2.6	0.8	6.0	84	777	6950	86
800	500	GFF1	-	-	896	188	96.7	96.2	0.77	0.71	8519	2.6	0.8	6.3	94	823	7150	86
850	560	GFF1	-	-	896	200	96.9	96.5	0.77	0.70	9056	2.4	0.7	5.3	118	867	8550	86
900	560	GFF1	-	-	896	209	97.0	96.6	0.78	0.71	9587	2.5	0.7	5.6	125	911	8800	86
950	560	GFF1	-	-	896	224	97.2	96.8	0.77	0.70	10119	2.6	0.8	5.9	139	955	9300	86
1000	560	GFF1	-	-	896	232	97.2	96.9	0.78	0.71	10649	2.6	0.8	5.7	153	998	9800	86

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm ²	External max. kgm ²		
6.6kV, 50Hz																		
2-pole																		
160	315H	GFF1	-	-	2967	17	94.7	94.4	0.88	0.86	515	2.4	1.1	6.9	1.5	12	1450	85
185	315H	GFF1	-	-	2966	20	94.7	94.5	0.89	0.87	595	2.3	1.0	6.7	1.6	14	1450	85
200	315H	GFF1	-	-	2967	21	94.8	94.6	0.89	0.87	644	2.3	1.1	6.8	1.7	15	1520	85
220	315H	GFF1	-	-	2967	23	94.9	94.8	0.89	0.88	708	2.3	1.1	6.8	1.9	16	1590	85
250	315H	GFF1	-	-	2967	26	95.0	94.9	0.89	0.88	804	2.3	1.1	6.7	2.1	18	1660	85
280	355H	GFF1	-	-	2974	29	95.0	94.6	0.89	0.87	899	2.4	0.8	6.7	4.1	20	2130	85
300	355H	GFF1	-	-	2972	31	95.0	94.6	0.89	0.88	964	2.3	0.8	6.5	4.0	21	2130	85
315	355H	GFF1	-	-	2975	33	95.1	94.7	0.90	0.88	1011	2.5	0.8	6.7	4.5	22	2210	85
355	355H	GFF1	-	-	2974	37	95.5	95.2	0.90	0.88	1139	2.4	0.9	6.7	5.4	24	2390	85
400	355H	GFF1	-	-	2977	41	95.6	95.3	0.90	0.88	1283	2.6	0.9	7.3	5.9	27	2470	85
450	400H	GFF1	-	-	2978	46	95.9	95.6	0.90	0.88	1442	2.3	0.8	6.6	10	30	3120	85
500	400H	GFF1	-	-	2978	51	96.2	95.9	0.90	0.88	1603	2.3	0.8	6.6	10	33	3240	85
530	400H	GFF1	-	-	2979	54	96.3	96.1	0.90	0.88	1698	2.4	0.8	6.9	11	34	3360	85
560	400H	GFF1	-	-	2979	57	96.5	96.2	0.90	0.88	1795	2.5	0.9	7.2	12	36	3470	85
4-pole																		
160	315H	GFF1	-	-	1482	18	92.8	92.5	0.87	0.84	1030	2.2	1.0	6.1	2.6	59	1420	85
185	315H	GFF1	-	-	1481	20	93.1	93.0	0.88	0.86	1192	2.1	1.0	5.8	2.8	67	1420	85
200	315H	GFF1	-	-	1482	22	93.4	93.2	0.87	0.85	1288	2.2	1.1	6.1	3.0	72	1480	85
220	315H	GFF1	-	-	1487	25	94.0	93.4	0.85	0.81	1412	2.6	1.1	7.5	4.5	88	1480	85
250	315H	GFF1	-	-	1485	27	94.3	93.9	0.86	0.83	1607	2.6	1.1	6.6	3.9	88	1610	85
280	315H	GFF1	-	-	1487	31	94.5	94.0	0.85	0.81	1797	2.8	1.1	7.0	4.8	97	1740	85
300	315H	GFF1	-	-	1488	33	94.5	93.9	0.85	0.80	1924	2.8	1.2	7.4	5.0	103	1740	85
315	355H	GFF1	-	-	1486	34	94.6	94.2	0.87	0.84	2023	2.7	1.1	6.5	6.2	108	2280	85
355	355H	GFF1	-	-	1485	37	95.0	94.7	0.89	0.87	2281	2.5	1.0	6.2	7.0	120	2360	85
400	355H	GFF1	-	-	1487	42	95.3	95.0	0.89	0.86	2568	2.8	1.1	6.9	8.4	133	2520	85
450	355H	GFF1	-	-	1487	47	95.6	95.3	0.89	0.87	2889	2.7	1.2	6.9	9.3	147	2610	85
500	400H	GFF1	-	-	1489	53	95.8	95.4	0.88	0.85	3206	2.6	1.1	6.7	13	161	3080	85
530	400H	GFF1	-	-	1489	55	95.9	95.5	0.88	0.86	3398	2.6	1.1	6.8	14	170	3180	85
560	400H	GFF1	-	-	1489	58	96.1	95.7	0.89	0.86	3590	2.6	1.1	6.9	15	178	3280	85
600	400H	GFF1	-	-	1489	62	96.1	95.8	0.89	0.86	3846	2.7	1.1	7.1	16	189	3380	85
630	400H	GFF1	-	-	1490	65	96.2	95.8	0.89	0.85	4037	2.8	1.2	7.4	18	197	3480	85
650	400H	GFF1	-	-	1489	67	96.3	95.9	0.89	0.86	4166	2.7	1.2	7.2	18	202	3480	85
710	450	GFF1	-	-	1491	73	96.3	96.0	0.89	0.87	4545	2.5	0.8	6.3	29	218	4450	85
750	450	GFF1	-	-	1492	77	96.5	96.1	0.89	0.87	4800	2.6	0.8	6.6	32	228	4590	85
800	450	GFF1	-	-	1491	82	96.5	96.2	0.89	0.87	5122	2.4	0.8	6.2	32	241	4590	85
850	450	GFF1	-	-	1491	87	96.6	96.3	0.89	0.87	5440	2.5	0.8	6.5	34	254	4730	85
900	450	GFF1	-	-	1492	92	96.8	96.4	0.89	0.87	5758	2.7	0.8	7.0	36	266	4870	85
950	450	GFF1	-	-	1492	96	96.9	96.5	0.89	0.87	6076	2.8	0.8	7.3	41	278	5150	85
1000	450	GFF1	-	-	1492	101	96.9	96.6	0.90	0.88	6398	2.6	0.8	7.0	41	290	5150	85
1120	500	GFF1	-	-	1490	113	97.2	96.9	0.90	0.88	7174	2.4	0.8	6.2	58	318	6750	85
1250	500	GFF1	-	-	1491	125	97.3	97.1	0.90	0.89	8001	2.6	0.8	6.7	69	348	7350	85
1300	500	GFF1	-	-	1491	130	97.4	97.1	0.90	0.89	8323	2.5	0.8	6.5	69	359	7350	85
1400	500	GFF1	-	-	1492	140	97.4	97.2	0.90	0.88	8959	2.6	0.9	6.8	72	381	7550	85
1500	560	GFF1	-	-	1492	151	97.6	97.4	0.89	0.87	9598	2.7	0.8	6.3	84	402	8300	85
1600	560	GFF1	-	-	1492	161	97.7	97.5	0.89	0.87	10233	2.8	0.8	6.7	94	422	8800	85
1800	560	GFF1	-	-	1492	180	97.9	97.7	0.90	0.87	11513	2.8	0.8	6.8	109	462	9550	85
2000	560	GFF1	-	-	1492	200	97.9	97.7	0.90	0.87	12792	2.8	0.8	6.8	114	500	9800	85

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm^2	External max. kgm^2		
6.6kV, 50Hz																		
6-pole																		
160	315H	GFF1	-	-	991	19	93.2	92.6	0.80	0.75	1541	2.3	1.0	6.3	6.0	157	1710	83
185	315H	GFF1	-	-	989	22	93.2	93.0	0.82	0.78	1785	2.0	0.9	5.6	6.0	180	1710	83
200	315H	GFF1	-	-	990	24	93.5	93.2	0.81	0.77	1929	2.1	0.9	5.7	6.6	193	1780	83
220	355H	GFF1	-	-	988	25	94.1	94.1	0.82	0.78	2125	2.0	1.0	5.7	7.9	211	2260	83
250	355H	GFF1	-	-	988	29	94.4	94.3	0.82	0.79	2414	2.1	1.0	5.7	8.8	237	2260	83
280	355H	GFF1	-	-	988	32	94.7	94.6	0.83	0.79	2704	2.0	1.0	5.8	10	262	2420	83
300	355H	GFF1	-	-	990	34	94.9	94.8	0.82	0.78	2894	2.2	1.1	6.3	12	279	2580	83
315	355H	GFF1	-	-	989	36	94.9	94.8	0.83	0.79	3040	2.1	1.1	6.0	12	292	2580	83
355	400H	GFF1	-	-	992	40	95.2	94.8	0.82	0.77	3414	2.3	1.1	6.4	16	325	3070	84
400	400H	GFF1	-	-	992	45	95.5	95.2	0.83	0.79	3851	2.1	1.0	6.0	20	361	3270	84
450	400H	GFF1	-	-	992	50	95.6	95.4	0.83	0.79	4332	2.1	1.1	6.0	21	402	3380	84
500	400H	GFF1	-	-	992	56	95.7	95.4	0.82	0.78	4811	2.2	1.1	6.2	23	441	3480	84
530	400H	GFF1	-	-	993	59	95.8	95.3	0.82	0.77	5095	2.4	1.2	6.8	24	464	3580	84
560	450	GFF1	-	-	994	62	95.9	95.4	0.82	0.78	5377	2.8	0.9	6.8	43	488	4680	85
600	450	GFF1	-	-	994	66	95.9	95.5	0.83	0.79	5763	2.7	0.9	6.4	43	518	4680	85
630	450	GFF1	-	-	994	68	96.1	95.8	0.85	0.81	6051	2.6	0.9	6.3	49	541	4960	85
650	450	GFF1	-	-	994	70	96.1	95.8	0.85	0.81	6245	2.5	0.8	6.1	49	556	4960	85
710	450	GFF1	-	-	994	76	96.2	95.9	0.85	0.81	6821	2.5	0.9	6.2	52	601	5100	85
750	450	GFF1	-	-	994	81	96.3	95.9	0.84	0.80	7202	2.7	0.9	6.6	55	630	5240	85
800	500	GFF1	-	-	993	87	96.3	95.8	0.84	0.80	7687	2.5	0.8	6.0	63	666	6550	85
850	500	GFF1	-	-	994	93	96.4	95.9	0.84	0.80	8166	2.5	0.8	6.1	68	702	6750	85
900	500	GFF1	-	-	994	98	96.5	96.1	0.84	0.80	8645	2.6	0.8	6.2	72	737	6950	85
950	500	GFF1	-	-	994	104	96.6	96.1	0.83	0.79	9122	2.7	0.9	6.5	76	773	7150	85
1000	500	GFF1	-	-	994	108	96.7	96.3	0.84	0.80	9600	2.7	0.9	6.6	85	807	7350	85
1120	560	GFF1	-	-	995	125	96.9	96.6	0.81	0.76	10747	2.7	0.8	6.4	114	889	8800	85
1250	560	GFF1	-	-	995	138	97.1	96.8	0.82	0.77	11994	2.6	0.8	6.3	127	975	9300	85
1300	560	GFF1	-	-	995	144	97.1	96.8	0.82	0.77	12469	2.8	0.9	6.7	140	1007	9800	85

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm^2	External max. kgm^2		
6.6kV, 50Hz																		
8-pole																		
110	315H	GFF1	-	-	742	14	91.5	90.8	0.76	0.70	1415	2.3	1.1	6.6	6.0	224	1620	81
132	315H	GFF1	-	-	741	17	91.9	91.5	0.78	0.72	1699	2.2	1.0	6.5	6.7	265	1680	81
150	315H	GFF1	-	-	741	19	92.3	91.9	0.78	0.72	1931	2.2	1.0	6.5	7.3	298	1750	81
160	355H	GFF1	-	-	742	20	92.7	92.4	0.78	0.72	2059	2.0	1.0	6.3	10	317	2230	81
185	355H	GFF1	-	-	742	23	93.0	92.7	0.78	0.72	2381	2.0	1.0	6.3	10	362	2310	81
200	355H	GFF1	-	-	742	24	93.4	93.1	0.78	0.74	2573	2.0	1.0	6.3	12	389	2470	81
220	355H	GFF1	-	-	742	27	93.7	93.3	0.78	0.73	2829	2.1	1.0	6.6	14	425	2550	81
250	400H	GFF1	-	-	743	31	94.1	93.7	0.76	0.72	3210	2.0	1.0	5.5	14	477	2840	83
280	400H	GFF1	-	-	744	35	94.2	93.8	0.76	0.72	3594	2.0	1.0	5.7	15	529	3940	83
300	400H	GFF1	-	-	744	36	94.2	93.9	0.78	0.74	3850	2.0	1.0	5.8	19	564	3140	83
315	400H	GFF1	-	-	744	38	94.5	94.1	0.78	0.74	4042	2.0	1.0	5.9	20	589	3250	83
355	400H	GFF1	-	-	744	43	94.7	94.2	0.77	0.72	4552	2.0	1.1	6.3	23	657	3450	83
400	400H	GFF1	-	-	744	49	94.8	94.3	0.76	0.71	5129	2.1	1.0	6.4	25	732	3560	83
450	450	GFF1	-	-	744	53	95.2	95.0	0.79	0.76	5773	2.0	0.8	5.3	46	814	4680	83
500	450	GFF1	-	-	745	59	95.4	95.0	0.78	0.74	6406	2.3	0.8	5.6	53	895	4960	83
530	450	GFF1	-	-	745	63	95.5	95.1	0.78	0.73	6788	2.4	0.8	5.8	59	944	5240	83
560	450	GFF1	-	-	745	66	95.5	95.2	0.79	0.74	7175	2.3	0.8	5.6	59	991	5240	83
600	500	GFF1	-	-	746	71	95.9	95.5	0.77	0.72	7678	2.4	0.8	5.9	79	1054	6750	83
630	500	GFF1	-	-	746	75	96.0	95.5	0.77	0.71	8060	2.5	0.8	6.0	84	1101	6950	83
650	500	GFF1	-	-	746	77	96.0	95.6	0.78	0.72	8317	2.4	0.8	5.9	84	1132	6950	83
710	500	GFF1	-	-	746	82	96.1	95.8	0.79	0.74	9088	2.3	0.8	5.6	94	1225	7350	83
750	500	GFF1	-	-	746	87	96.2	95.8	0.79	0.73	9597	2.4	0.8	5.8	99	1285	7550	83
800	560	GFF1	-	-	746	95	96.4	96.2	0.77	0.71	10230	2.4	0.8	5.6	124	1361	8550	83
850	560	GFF1	-	-	747	101	96.5	96.3	0.77	0.71	10868	2.4	0.8	5.6	131	1435	8800	83
900	560	GFF1	-	-	747	105	96.6	96.4	0.78	0.72	11507	2.4	0.8	5.5	146	1509	9300	83
950	560	GFF1	-	-	747	110	96.7	96.5	0.78	0.72	12146	2.4	0.8	5.5	161	1582	9800	83

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm^2	External max. kgm^2		
6.6kV, 60Hz																		
2-pole																		
160	315H	GFF1	-	-	3564	17	94.2	93.7	0.88	0.86	428	2.3	1.0	6.7	1.2	8	1370	87
185	315H	GFF1	-	-	3563	20	94.5	94.1	0.88	0.87	496	2.2	1.0	6.5	1.3	9	1370	87
200	315H	GFF1	-	-	3563	21	94.7	94.4	0.89	0.87	536	2.2	1.1	6.5	1.5	9	1450	87
220	315H	GFF1	-	-	3564	23	94.9	94.5	0.89	0.88	589	2.2	1.0	6.5	1.6	10	1520	87
250	315H	GFF1	-	-	3568	26	95.1	94.7	0.89	0.88	669	2.3	1.2	7.0	2.1	11	1660	87
280	355H	GFF1	-	-	3575	29	95.0	94.3	0.89	0.87	748	2.6	0.8	7.0	4.1	13	2130	87
300	355H	GFF1	-	-	3573	31	95.1	94.4	0.90	0.88	802	2.4	0.7	6.8	4.1	13	2130	87
315	355H	GFF1	-	-	3574	33	95.2	94.7	0.90	0.89	841	2.5	0.8	6.6	5.0	14	2300	87
355	355H	GFF1	-	-	3575	37	95.5	95.0	0.90	0.89	948	2.5	0.8	6.8	5.9	15	2470	87
400	355H	GFF1	-	-	3576	41	95.6	95.2	0.90	0.88	1068	2.6	0.8	7.1	5.9	17	2470	87
450	400H	GFF1	-	-	3578	46	96.0	95.6	0.90	0.89	1200	2.3	0.7	6.7	11	19	3360	87
500	400H	GFF1	-	-	3579	51	96.4	96.0	0.90	0.89	1334	2.4	0.8	6.9	12	21	3470	87
530	400H	GFF1	-	-	3578	54	96.4	96.1	0.90	0.89	1414	2.2	0.7	6.5	12	22	3470	87
560	400H	GFF1	-	-	3579	57	96.5	96.1	0.90	0.88	1494	2.6	0.8	7.3	12	23	3470	87
4-pole																		
220	315H	GFF1	-	-	1783	24	94.0	93.6	0.86	0.83	1178	2.3	0.9	5.7	2.6	50	1420	87
250	315H	GFF1	-	-	1784	27	94.6	94.2	0.87	0.84	1337	2.4	1.0	6.0	3.5	56	1550	87
280	315H	GFF1	-	-	1787	31	94.7	94.1	0.86	0.82	1496	2.6	1.1	6.9	4.1	62	1610	87
300	315H	GFF1	-	-	1787	33	94.9	94.3	0.86	0.82	1603	2.6	1.1	6.9	4.5	66	1680	87
315	315H	GFF1	-	-	1787	34	95.1	94.4	0.86	0.82	1682	2.7	1.2	7.2	5.0	69	1740	87
355	355H	GFF1	-	-	1785	38	95.0	94.6	0.88	0.85	1898	2.5	1.0	6.2	5.6	76	2200	87
400	355H	GFF1	-	-	1786	42	95.5	95.1	0.89	0.87	2138	2.6	1.0	6.6	7.3	85	2360	87
450	355H	GFF1	-	-	1786	47	95.7	95.3	0.89	0.87	2405	2.7	1.0	6.7	8.0	94	2440	87
500	355H	GFF1	-	-	1785	51	96.0	95.6	0.90	0.88	2673	2.6	1.0	6.7	9.3	102	2610	87
530	400H	GFF1	-	-	1788	55	96.1	95.6	0.89	0.86	2829	2.5	1.0	6.5	12	108	3080	87
560	400H	GFF1	-	-	1788	58	96.2	95.8	0.89	0.87	2989	2.5	1.0	6.6	13	113	3180	87
600	400H	GFF1	-	-	1788	61	96.3	95.9	0.90	0.88	3203	2.5	1.0	6.6	15	120	3280	87
630	400H	GFF1	-	-	1788	64	96.5	96.1	0.90	0.88	3363	2.5	1.1	6.7	16	125	3380	87
650	400H	GFF1	-	-	1789	66	96.5	96.0	0.90	0.87	3468	2.7	1.1	7.3	18	128	3480	87
710	450	GFF1	-	-	1791	73	96.5	96.0	0.88	0.86	3783	2.6	0.7	6.5	27	138	4310	89
750	450	GFF1	-	-	1791	77	96.5	96.1	0.89	0.86	3997	2.5	0.7	6.2	27	144	4310	89
800	450	GFF1	-	-	1791	82	96.7	96.2	0.89	0.87	4263	2.5	0.7	6.4	29	152	4450	89
850	450	GFF1	-	-	1791	86	96.9	96.5	0.90	0.88	4529	2.5	0.7	6.5	34	160	4730	89
900	450	GFF1	-	-	1791	91	96.9	96.6	0.90	0.88	4797	2.4	0.7	6.1	34	167	4730	89
950	450	GFF1	-	-	1791	96	97.0	96.7	0.90	0.89	5062	2.5	0.7	6.4	38	175	5010	89
1000	450	GFF1	-	-	1791	100	97.1	96.8	0.90	0.89	5330	2.3	0.7	6.1	38	182	5010	89
1120	500	GFF1	-	-	1788	113	97.1	96.9	0.90	0.89	5979	2.1	0.7	5.5	47	200	6150	90
1250	500	GFF1	-	-	1790	126	97.3	97.0	0.89	0.88	6666	2.4	0.8	6.1	51	217	6350	90
1300	500	GFF1	-	-	1789	131	97.3	97.1	0.90	0.88	6935	2.3	0.7	5.9	51	224	6350	90
1400	500	GFF1	-	-	1789	140	97.5	97.2	0.90	0.89	7468	2.2	0.7	5.8	58	237	6750	90
1500	500	GFF1	-	-	1789	149	97.6	97.3	0.90	0.89	8003	2.3	0.8	6.0	65	250	7150	90
1600	500	GFF1	-	-	1790	159	97.7	97.4	0.91	0.89	8533	2.4	0.8	6.4	72	262	7550	90
1800	560	GFF1	-	-	1791	179	97.8	97.6	0.90	0.89	9595	2.4	0.7	5.8	94	286	8800	90
2000	560	GFF1	-	-	1792	200	97.8	97.5	0.90	0.88	10653	2.5	0.8	6.7	114	308	9800	90

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm^2	External max. kgm^2		
6.6kV, 60Hz																		
6-pole																		
160	315H	GFF1	-	-	1190	19	93.2	92.7	0.80	0.75	1283	2.1	0.9	5.9	4.5	101	1580	87
185	315H	GFF1	-	-	1189	22	93.4	93.0	0.80	0.76	1485	2.1	0.9	5.8	4.9	115	1580	87
200	315H	GFF1	-	-	1190	24	93.7	93.3	0.81	0.76	1605	2.1	0.9	5.9	5.4	124	1650	87
220	315H	GFF1	-	-	1190	26	94.0	93.6	0.80	0.76	1765	2.1	0.8	6.0	6.0	135	1710	87
250	355H	GFF1	-	-	1188	29	94.6	94.4	0.82	0.78	2008	2.0	1.0	5.8	7.3	151	2180	87
280	355H	GFF1	-	-	1189	32	94.7	94.4	0.82	0.77	2247	2.2	1.1	6.3	9.1	168	2340	87
300	355H	GFF1	-	-	1190	34	94.9	94.6	0.82	0.78	2407	2.2	1.1	6.4	10	178	2420	87
315	355H	GFF1	-	-	1189	36	94.9	94.7	0.82	0.79	2529	2.1	1.0	6.1	10	186	2420	87
355	355H	GFF1	-	-	1189	40	95.2	95.0	0.82	0.78	2850	2.3	1.0	6.6	12	207	2580	87
400	400H	GFF1	-	-	1192	46	95.4	94.9	0.80	0.75	3203	2.2	1.1	6.4	15	231	2970	88
450	400H	GFF1	-	-	1192	52	95.6	95.2	0.81	0.76	3604	2.2	1.1	6.3	16	256	3070	88
500	400H	GFF1	-	-	1192	56	95.9	95.5	0.83	0.79	4005	2.1	1.1	6.1	20	281	3270	88
530	400H	GFF1	-	-	1192	60	96.0	95.5	0.81	0.77	4243	2.3	1.2	6.7	21	296	3380	88
560	400H	GFF1	-	-	1191	62	96.1	95.8	0.83	0.80	4487	2.1	1.1	6.0	23	310	3480	88
600	400H	GFF1	-	-	1192	68	96.0	95.5	0.81	0.77	4803	2.3	1.2	6.9	24	330	3580	88
630	450	GFF1	-	-	1193	71	96.2	95.8	0.81	0.76	5039	2.6	0.8	6.1	34	344	4260	88
650	450	GFF1	-	-	1194	73	96.3	95.8	0.82	0.77	5198	2.7	0.8	6.4	37	353	4400	88
710	450	GFF1	-	-	1193	77	96.3	95.9	0.84	0.80	5679	2.5	0.8	6.1	43	381	4680	88
750	450	GFF1	-	-	1194	82	96.4	96.0	0.84	0.80	5997	2.6	0.8	6.4	46	400	4820	88
800	450	GFF1	-	-	1193	86	96.4	96.0	0.85	0.81	6400	2.6	0.8	6.5	52	423	5100	88
850	500	GFF1	-	-	1193	94	96.6	96.0	0.82	0.78	6799	2.5	0.8	6.1	55	445	6150	88
900	500	GFF1	-	-	1194	99	96.6	96.1	0.83	0.78	7198	2.6	0.8	6.2	59	467	6350	88
950	500	GFF1	-	-	1194	103	96.7	96.2	0.84	0.80	7598	2.5	0.8	6.1	68	489	6750	88
1000	500	GFF1	-	-	1194	107	96.8	96.4	0.84	0.81	7997	2.5	0.8	6.1	76	511	7150	88
1120	560	GFF1	-	-	1195	129	97.2	96.8	0.79	0.73	8947	2.7	0.8	6.6	88	561	7800	88
1250	560	GFF1	-	-	1195	140	97.4	97.0	0.81	0.75	9987	2.6	0.8	6.4	101	615	8300	88
1300	560	GFF1	-	-	1195	145	97.5	97.1	0.81	0.75	10384	2.7	0.8	6.7	114	635	8800	88
1400	560	GFF1	-	-	1195	154	97.6	97.3	0.82	0.76	11181	2.7	0.8	6.7	134	674	9550	88

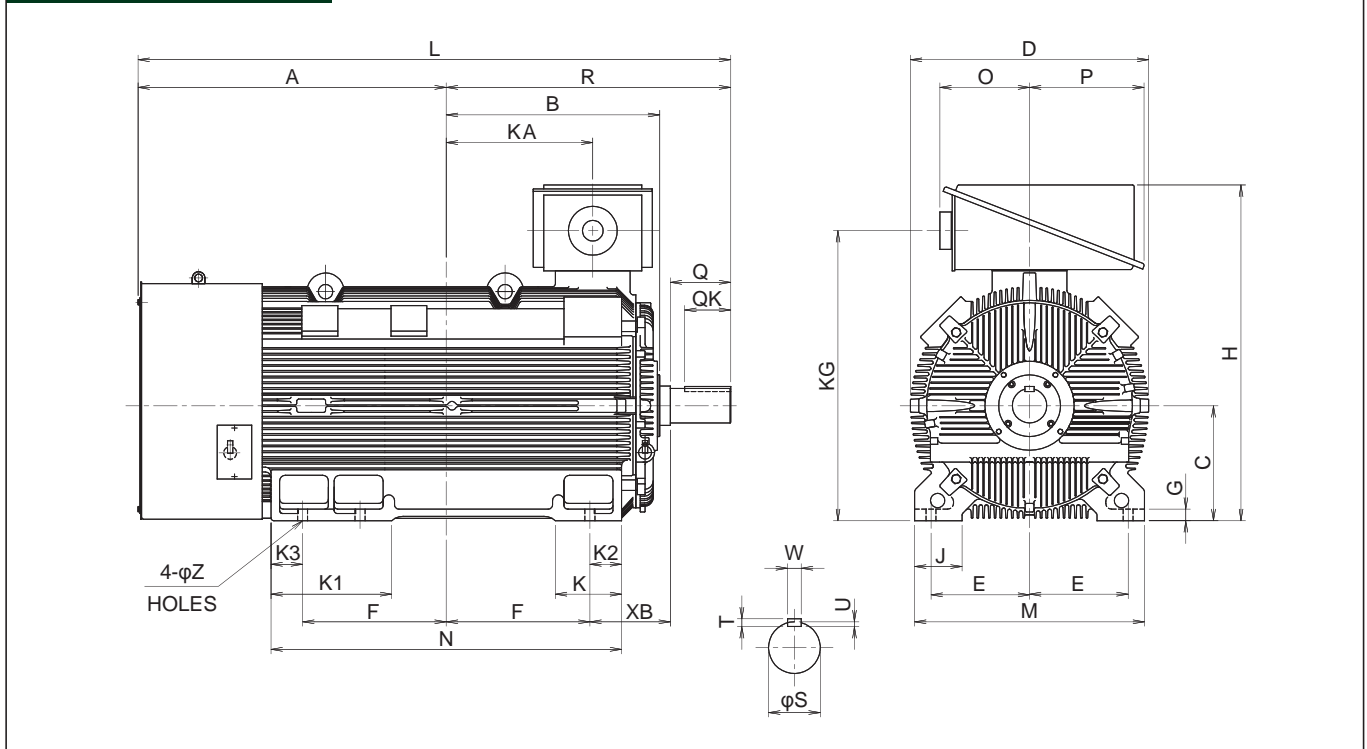
■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm ²	External max. kgm ²		
6.6kV, 60Hz																		
8-pole																		
110	315H	GFF1	-	-	893	15	91.6	90.7	0.74	0.67	1176	2.4	1.0	6.8	4.9	144	1550	84
132	315H	GFF1	-	-	892	17	92.1	91.4	0.76	0.70	1413	2.3	1.0	6.7	5.4	170	1550	84
150	315H	GFF1	-	-	892	19	92.5	91.9	0.77	0.71	1606	2.2	1.0	6.7	6.0	192	1620	84
160	315H	GFF1	-	-	891	20	93.0	92.5	0.78	0.73	1713	2.2	1.0	6.7	7.3	203	1750	84
185	355H	GFF1	-	-	890	22	93.1	93.0	0.79	0.76	1984	2.0	1.0	5.5	8.4	232	2150	84
200	355H	GFF1	-	-	891	24	93.8	93.5	0.79	0.75	2143	2.0	0.9	5.9	10	272	2310	84
220	355H	GFF1	-	-	892	27	93.9	93.5	0.78	0.73	2354	2.1	1.0	6.6	12	272	2390	84
250	355H	GFF1	-	-	892	30	94.0	93.6	0.78	0.73	2674	2.1	1.0	6.9	14	306	2550	84
280	400H	GFF1	-	-	894	35	94.4	93.8	0.76	0.71	2991	2.0	1.0	5.7	13	339	2840	86
300	400H	GFF1	-	-	894	37	94.4	93.9	0.76	0.72	3204	2.0	1.0	6.0	15	361	3940	86
315	400H	GFF1	-	-	894	39	94.5	94.0	0.76	0.72	3363	2.1	1.0	6.1	16	377	3040	86
355	400H	GFF1	-	-	894	43	94.7	94.2	0.77	0.72	3791	2.0	1.0	6.0	18	421	3140	86
400	400H	GFF1	-	-	894	48	95.1	94.5	0.77	0.73	4270	2.1	1.0	6.2	22	468	3350	86
450	400H	GFF1	-	-	894	53	95.5	95.0	0.78	0.75	4805	2.0	1.0	6.1	25	520	3560	86
500	450	GFF1	-	-	894	58	95.9	95.5	0.79	0.75	5338	2.1	0.8	5.3	40	572	4400	86
530	450	GFF1	-	-	895	62	96.0	95.5	0.78	0.74	5656	2.2	0.8	5.4	43	602	4540	86
560	450	GFF1	-	-	895	65	96.1	95.7	0.79	0.75	5974	2.2	0.8	5.5	49	633	4820	86
600	450	GFF1	-	-	895	70	96.2	95.7	0.79	0.74	6397	2.4	0.8	5.8	56	672	5100	86
630	500	GFF1	-	-	896	75	96.4	95.8	0.77	0.70	6709	2.7	0.8	6.5	73	702	6550	86
650	500	GFF1	-	-	896	78	96.5	95.9	0.76	0.69	6923	2.6	0.8	6.3	73	722	6550	86
710	500	GFF1	-	-	896	85	96.6	96.0	0.76	0.70	7562	2.6	0.8	6.3	79	780	6750	86
750	500	GFF1	-	-	896	89	96.7	96.2	0.77	0.71	7987	2.6	0.8	6.3	89	818	6950	86
800	500	GFF1	-	-	896	94	96.8	96.3	0.77	0.71	8519	2.6	0.8	6.3	99	866	7150	86
850	560	GFF1	-	-	896	100	97.2	96.8	0.77	0.70	9056	2.5	0.8	5.7	124	913	8550	86
900	560	GFF1	-	-	896	107	97.2	96.8	0.76	0.70	9587	2.5	0.8	5.9	131	959	8800	86
950	560	GFF1	-	-	896	112	97.3	96.9	0.77	0.70	10119	2.5	0.8	5.9	146	1005	9300	86
1000	560	GFF1	-	-	896	118	97.3	97.0	0.76	0.70	10649	2.6	0.8	6.0	161	1051	9800	86

■ Dimension drawings

Antifriction bearings

Drawing No.: GFF1



Frame	Dimensions															
	A	B	C	D	E	F	G	H	KA	KG	J	K	K1	K2	K3	L
Frame No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
2-pole																
315	939	541.5	315	707	254	355	35	996	306	840	130	175	428	80	80	1650
355	976	669	355	764	305	450	40	1076	434	920	160	190	460	80	80	1890
400	1060	745	400	900	343	500	40	1166	510	1010	165	230	420	110	110	2010
4-pole and above																
315	881	541.5	315	707	254	355	35	996	306	840	130	175	428	80	80	1622
355	976	669	355	764	305	450	40	1076	434	920	160	190	460	80	80	1890
400	1060	745	400	900	343	500	40	1166	510	1010	165	230	420	110	110	2050
450	1378	777	450	920	375	500	40	1445	435	1215	200	310	545	145	400	2443
500	1473	902	500	1036	475	625	45	1525	560	1295	230	400	675	145	290	2663
560	1498	907	560	1136	500	700	50	1635	635	1405	210	400	650	145	245	2783

Frame	Dimensions				Shaft end				Key size				
	M	N	O	P	XB	Z	Q	QK	R	S	T	U	W
Frame No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
2-pole													
315	636	870	301	401	216	28	140	110	711	65	11	7	18
355	710	1060	301	401	254	28	140	110	844	75	12	7.5	20
400	800	1220	301	401	280	35	170	140	950	85	14	9	22
4-pole and above													
315	636	870	301	401	216	28	170	140	741	95	14	9	25
355	710	1060	301	401	254	28	210	160	914	110	16	10	28
400	800	1220	301	401	280	35	210	160	990	120	18	11	32
450	950	1545	422	360	315	42	250	220	1065	130	18	11	32
500	1120	1685	422	360	315	48	250	220	1190	130	18	11	32
560	1170	1790	422	360	335	48	250	220	1285	130	18	11	32

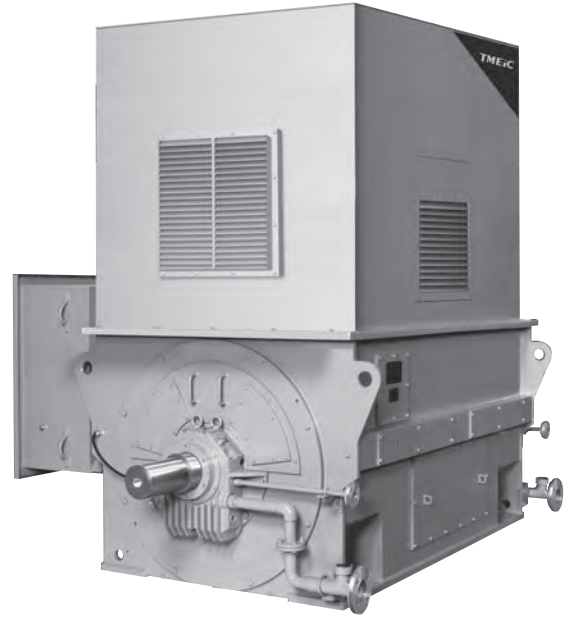
Technical Data

IC01·IP24W (WP II – Weather-Protected Type II)

Air-cooled motors

■ Technical data

IC01·IP24W (WP II)	
Rated voltage	2.3kV and 4.16kV
Rated frequency	60Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3/IM V1
Degree of protection	IP24W
Cooling method	IC01
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height	400 to 630mm
Bearings	Antifriction bearings, sleeve bearings
Cage material	Copper
Frame design for shaft heights 400 to 630mm	Frame: Steel Top cover: Steel
Standards	IEC, NEMA, JEC



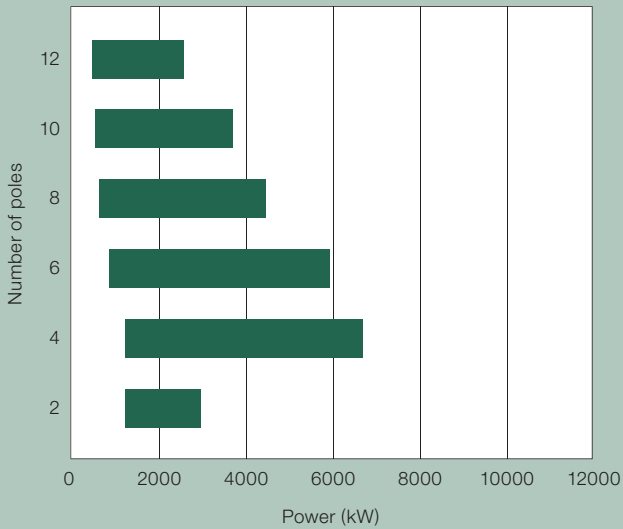
■ Power range – Shaft height: 400 to 630mm

Insulation system, thermal class: 155 (F), utilized to 130 (B).

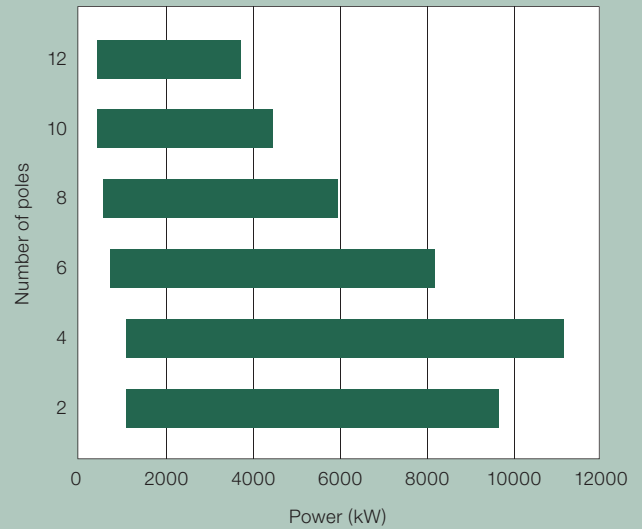
Ambient temperature: up to 40°C

Installation altitude: up to 1000m

2.3kV, 60Hz



4.16kV, 60Hz



■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm ²	External max. kgm ²		
2.3kV, 60Hz																		
2-pole																		
1300	400-1120	GW2			3571	381	96.3	96.3	0.89	0.88	3478	2.0	0.7	4.7	8	110	3330	84
1490	400-1120	GW2			3571	436	96.5	96.5	0.89	0.88	3987	2.0	0.8	4.8	9	110	3460	84
1670	400-1120	GW2			3574	488	96.7	96.7	0.89	0.87	4465	2.2	0.9	5.5	10	120	3600	84
1860	400-1120	GW2			3574	536	96.8	96.8	0.90	0.88	4973	2.2	0.9	5.6	11	110	3730	84
2230	450-1400	GW2			3568	659	96.6	96.3	0.88	0.86	5972	2.1	0.7	5.0	16	140	4120	85
2610	450-1400	GW2			3569	761	96.8	96.6	0.89	0.88	6988	2.2	0.8	5.4	19	150	4570	85
2980	450-1400	GW2			3571	876	97.1	96.9	0.88	0.86	7974	2.4	0.9	6.1	20	160	4790	85
4-pole																		
1300	400-1120	GW1	118-40M	GWT1	1786	389	96.6	96.5	0.87	0.86	6955	1.9	1.0	5.4	21	360	3270	85
1490	400-1120	GW1	118-40M	GWT1	1786	445	96.7	96.7	0.87	0.86	7971	1.8	0.9	5.2	22	400	3480	85
1670	400-1250	GW1	118-40L	GWT1	1787	493	96.8	96.7	0.88	0.87	8929	1.9	1.0	5.5	26	440	3830	85
1860	400-1250	GW1	118-40L	GWT1	1787	548	96.9	96.9	0.88	0.87	9945	1.9	1.0	5.5	28	460	3960	85
2230	450-1250	GW1	132-45M	GWT1	1790	659	96.6	96.6	0.88	0.87	11904	1.9	0.7	5.2	38	540	4330	86
2610	450-1250	GW1	132-45M	GWT1	1791	770	96.8	96.8	0.88	0.87	13924	1.9	0.8	5.5	44	590	4640	86
2980	450-1400	GW1	132-45L	GWT1	1791	867	97.0	97.0	0.89	0.88	15898	2.0	0.8	5.7	54	640	5180	86
3350	450-1400	GW1	132-45L	GWT1	1791	975	97.0	97.1	0.89	0.88	17872	1.9	0.8	5.5	54	630	5180	86
3730	500-1600	GW1			1788	1084	97.1	97.0	0.89	0.87	19933	2.1	0.8	5.8	91	890	6300	83
4100	500-1800	GW1			1788	1190	97.2	97.1	0.89	0.88	21910	2.2	0.9	6.1	110	980	6960	83
4470	500-1800	GW1			1787	1298	97.2	97.2	0.89	0.89	23901	2.0	0.8	5.6	110	950	6960	83
5220	560-1800	GW3			1787	1482	97.2	97.0	0.91	0.90	27911	2.0	0.7	5.7	160	1330	8740	85
5960	560-1800	GW3			1785	1711	97.2	97.1	0.90	0.90	31903	1.8	0.6	5.0	160	1210	8740	85
6710	560-1800	GW3			1786	1901	97.4	97.3	0.91	0.91	35898	1.9	0.7	5.4	190	1520	9590	85
6-pole																		
930	400-1120	GW1	118-40M	GWT1	1188	290	96.1	96.2	0.84	0.81	7480	2.2	1.1	4.8	26	1100	3320	85
1110	400-1250	GW1	118-40L	GWT1	1188	346	96.1	96.3	0.84	0.82	8928	2.2	1.0	4.7	30	1220	3600	85
1300	400-1250	GW1	118-40L	GWT1	1189	404	96.2	96.4	0.84	0.82	10447	2.2	1.1	4.8	34	1330	3830	85
1490	450-1250	GW1	132-45M	GWT1	1191	457	96.3	96.3	0.85	0.83	11954	1.8	0.7	4.7	51	1250	4420	86
1670	450-1250	GW1	132-45M	GWT1	1190	507	96.3	96.4	0.86	0.84	13409	1.7	0.7	4.5	55	1320	4570	86
1860	450-1250	GW1	132-45M	GWT1	1190	564	96.4	96.5	0.86	0.84	14935	1.7	0.7	4.5	59	1340	4720	86
2230	450-1400	GW1	132-45L	GWT1	1191	674	96.7	96.7	0.86	0.84	17890	1.8	0.7	4.7	71	1540	5230	86
2610	500-1600	GW1	150-50M	GWT1	1190	808	96.6	96.6	0.84	0.82	20957	1.9	0.9	5.1	97	1680	6100	79
2980	500-1600	GW1	150-50M	GWT1	1190	933	96.7	96.6	0.83	0.80	23927	2.0	1.0	5.4	110	1780	6470	79
3350	500-1600	GW1	150-50M	GWT1	1190	1023	96.8	96.8	0.85	0.84	26898	1.9	0.9	5.3	120	1890	6840	79
3730	500-1800	GW1	150-50L	GWT1	1191	1151	96.9	96.8	0.84	0.81	29924	2.0	1.0	5.6	140	1970	7260	79
4100	500-1800	GW1	150-50L	GWT1	1191	1279	97.0	96.9	0.83	0.80	32893	2.1	1.0	5.7	150	2260	7630	79
4470	560-1800	GW1			1192	1302	96.9	96.9	0.89	0.89	35831	1.9	0.6	4.7	220	2590	8890	80
5220	560-2000	GW1			1192	1518	97.0	97.0	0.89	0.88	41843	1.8	0.6	4.6	240	2630	9420	80
5960	560-2000	GW1			1191	1732	97.1	97.1	0.89	0.89	47815	1.8	0.6	4.7	270	3000	10100	80

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current A	Efficiency		Power factor		Torque Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor	External max.		
2.3kV, 60Hz																		
8-pole																		
670	400-1120	GW1	118-40M	GWT1	893	218	95.5	95.5	0.81	0.77	7169	2.0	0.8	5.0	32	1580	3360	80
740	400-1120	GW1	118-40M	GWT1	893	241	95.5	95.6	0.81	0.76	7918	2.0	0.8	5.0	35	1660	3470	80
930	400-1250	GW1	118-40L	GWT1	893	301	95.8	95.8	0.81	0.77	9951	2.0	0.8	5.1	42	1960	3850	80
1110	450-1250	GW1	132-45M	GWT1	893	364	95.9	95.7	0.80	0.76	11877	2.0	0.8	4.4	58	3040	4350	82
1300	450-1250	GW1	132-45M	GWT1	894	425	96.1	95.9	0.80	0.76	13894	2.2	0.8	4.7	71	3540	4800	82
1490	450-1400	GW1	132-45L	GWT1	894	486	96.2	96.0	0.80	0.76	15925	2.1	0.8	4.7	80	3910	5150	82
1670	450-1400	GW1	132-45L	GWT1	894	539	96.1	96.0	0.81	0.76	17849	2.0	0.8	4.6	84	4060	5300	82
1860	500-1600	GW1	150-50M	GWT1	893	614	96.3	96.1	0.79	0.76	19902	1.8	0.9	5.2	120	2880	6260	84
2230	500-1600	GW1	150-50M	GWT1	893	726	96.4	96.3	0.80	0.77	23861	1.7	0.9	5.1	140	3330	6800	84
2610	500-1800	GW1	150-50L	GWT1	893	859	96.6	96.4	0.79	0.75	27927	1.8	1.0	5.5	160	3740	7400	84
2980	500-1800	GW1	150-50L	GWT1	893	981	96.6	96.5	0.79	0.76	31885	1.7	0.9	5.2	170	3680	7580	84
3350	560-1800	GW1	170-56M	GWT1	894	1024	96.7	96.5	0.85	0.81	35804	2.3	0.8	5.8	260	5840	8970	85
3730	560-1800	GW1	170-56M	GWT1	894	1166	96.8	96.6	0.83	0.79	39866	2.3	0.8	5.7	270	5920	9190	85
4100	560-2000	GW1	170-56L	GWT1	894	1265	96.9	96.7	0.84	0.80	43820	2.3	0.8	5.7	290	6400	9700	85
4470	560-2000	GW1	170-56L	GWT1	894	1379	96.9	96.7	0.84	0.80	47775	2.3	0.8	5.7	320	6750	10150	85
10-pole																		
590	400-1120	GW1	118-40M	GWT1	712	215	94.8	94.7	0.73	0.67	7918	2.0	0.9	4.6	31	2020	3220	78
670	400-1120	GW1	118-40M	GWT1	712	246	95.0	94.9	0.72	0.65	8991	2.0	0.9	4.7	34	2120	3330	78
740	400-1250	GW1	118-40L	GWT1	712	261	95.2	95.1	0.75	0.69	9931	1.9	0.8	4.6	41	2520	3710	78
930	450-1250	GW1	132-45M	GWT1	714	318	95.4	95.2	0.77	0.71	12446	2.0	0.8	4.8	69	3600	4630	80
1110	450-1400	GW1	132-45L	GWT1	713	379	95.5	95.4	0.77	0.72	14875	1.9	0.8	4.7	73	3770	4840	80
1300	450-1400	GW1	132-45L	GWT1	713	438	95.6	95.6	0.78	0.73	17421	1.8	0.8	4.5	82	3990	5140	80
1490	500-1600	GW1	150-50M	GWT1	714	493	96.1	95.9	0.79	0.74	19940	2.1	0.7	5.1	120	4480	6230	82
1670	500-1600	GW1	150-50M	GWT1	714	553	96.0	95.9	0.79	0.74	22348	2.1	0.7	5.1	140	4780	6590	82
1860	500-1600	GW1	150-50M	GWT1	713	608	96.0	96.0	0.80	0.76	24926	1.8	0.6	4.6	140	4640	6590	82
2230	500-1800	GW1	150-50L	GWT1	714	737	96.2	96.1	0.79	0.75	29842	2.0	0.7	5.0	160	5450	7360	82
2610	560-1800	GW1	170-56M	GWT1	713	860	96.5	96.3	0.79	0.75	34977	2.0	0.8	4.9	220	6140	8360	84
2980	560-1800	GW1	170-56M	GWT1	714	980	96.7	96.5	0.79	0.74	39879	2.1	0.8	5.1	260	6980	9030	84
3350	560-2000	GW1	170-56L	GWT1	713	1100	96.8	96.6	0.79	0.75	44893	2.1	0.8	5.0	290	7620	9540	84
3730	560-2000	GW1	170-56L	GWT1	714	1225	96.8	96.7	0.79	0.75	49916	2.1	0.8	5.0	310	8120	9980	84
12-pole																		
520	400-1120	GW1	118-40M	GWT1	592	196	94.1	94.1	0.71	0.65	8393	1.8	0.7	3.7	34	3420	3340	78
590	400-1250	GW1	118-40L	GWT1	592	221	94.4	94.4	0.71	0.65	9523	1.9	0.7	3.8	41	4080	3720	78
670	450-1250	GW1	132-45M	GWT1	592	243	94.9	94.7	0.73	0.67	10814	2.0	0.7	4.0	65	5070	4490	80
740	450-1250	GW1	132-45M	GWT1	592	265	94.9	94.8	0.74	0.69	11944	1.9	0.7	3.8	69	5260	4640	80
930	450-1400	GW1	132-45L	GWT1	592	332	95.2	95.1	0.74	0.69	15010	1.8	0.7	3.8	82	6020	5140	80
1110	500-1600	GW1	150-50M	GWT1	593	401	95.4	95.1	0.73	0.67	17885	2.3	0.8	4.4	110	7620	6010	82
1300	500-1600	GW1	150-50M	GWT1	593	462	95.5	95.3	0.74	0.68	20947	2.2	0.7	4.3	140	8750	6550	82
1490	500-1800	GW1	150-50L	GWT1	593	522	95.6	95.4	0.75	0.70	24008	2.2	0.7	4.2	150	9280	6960	82
1670	500-1800	GW1	150-50L	GWT1	593	601	95.6	95.4	0.73	0.66	26909	2.3	0.8	4.5	160	10050	7320	82
1860	560-1800	GW1	170-56M	GWT1	592	636	95.4	95.2	0.77	0.72	30021	2.1	0.6	4.4	220	8720	8350	84
2230	560-1800	GW1	170-56M	GWT1	592	773	95.4	95.3	0.76	0.71	35992	2.1	0.7	4.6	260	9990	9010	84
2610	560-2000	GW1	170-56L	GWT1	592	901	95.7	95.5	0.76	0.71	42126	2.2	0.7	4.7	310	11500	9960	84

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current <i>I_{rated}</i> A	Efficiency		Power factor		Torque <i>T_{rated}</i> Nm	Break-down torque <i>T_B/T_{rated}</i>	Locked-rotor torque <i>T_{LR}/T_{rated}</i>	Locked-rotor current <i>I_{LR}/I_{rated}</i>	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm ²	External max. kgm ²		
4.16kV, 60Hz																		
2-pole																		
1110	400-1120	GW2			3572	180	96.2	96.1	0.89	0.88	2969	2.1	0.7	4.9	8	110	3310	84
1300	400-1120	GW2			3573	213	96.3	96.3	0.88	0.86	3476	2.1	0.8	5.0	8	110	3310	84
1490	400-1120	GW2			3573	242	96.4	96.4	0.89	0.87	3985	2.1	0.8	5.1	9	110	3440	84
1670	400-1120	GW2			3574	270	96.6	96.6	0.89	0.87	4465	2.2	0.9	5.3	10	110	3580	84
1860	450-1400	GW2			3570	305	96.4	96.0	0.88	0.86	4978	2.3	0.7	5.4	16	150	4130	85
2230	450-1400	GW2			3569	360	96.6	96.3	0.89	0.87	5970	2.1	0.7	5.1	17	150	4350	85
2610	450-1400	GW2			3570	426	96.8	96.6	0.88	0.86	6986	2.3	0.8	5.7	19	150	4570	85
2980	500-1600	GW3			3581	487	96.7	96.4	0.88	0.87	7951	1.9	0.6	4.9	32	190	5680	85
3350	500-1600	GW3			3582	546	96.8	96.6	0.88	0.86	8936	2.0	0.6	5.2	35	190	5880	85
3730	500-1600	GW3			3580	601	96.9	96.7	0.89	0.88	9955	1.9	0.6	5.0	37	190	6090	85
4100	500-1600	GW3			3581	660	97.0	96.8	0.89	0.88	10940	1.9	0.6	5.1	40	190	6350	85
4470	560-1800	GW3			3587	719	97.0	96.7	0.89	0.87	11907	2.4	0.7	6.9	68	170	8310	87
5220	560-1800	GW3			3585	840	97.0	96.9	0.89	0.88	13913	2.1	0.6	6.0	68	160	8310	87
5960	560-1800	GW3			3586	956	97.3	97.1	0.89	0.88	15880	2.2	0.7	6.6	77	170	8840	87
6710	560-1800	GW3			3584	1064	97.3	97.2	0.90	0.90	17889	2.0	0.7	6.0	86	180	9320	87
7460	560-1800	GW3			3582	1183	97.3	97.2	0.90	0.90	19899	1.8	0.6	5.4	86	170	9320	87
8200	630-2000	GW3			3582	1303	97.1	96.7	0.90	0.88	21873	2.3	0.8	6.6	150	210	13640	88
8950	630-2000	GW3			3581	1420	97.2	96.8	0.90	0.89	23881	2.1	0.7	6.1	150	200	13640	88
9690	630-2000	GW3			3580	1538	97.2	97.0	0.90	0.89	25862	2.0	0.7	5.6	150	190	13640	88
4-pole																		
1110	400-1120	GW1	118-40M	GWT1	1787	184	96.4	96.2	0.87	0.86	5935	1.9	1.0	5.4	19	370	3150	85
1300	400-1120	GW1	118-40M	GWT1	1788	218	96.5	96.3	0.86	0.84	6947	2.1	1.0	5.8	21	370	3280	85
1490	400-1250	GW1	118-40L	GWT1	1788	246	96.8	96.6	0.87	0.84	7962	2.1	1.1	6.0	24	420	3590	85
1670	400-1250	GW1	118-40L	GWT1	1788	276	96.8	96.7	0.87	0.84	8924	2.1	1.1	6.0	26	430	3840	85
1860	450-1250	GW1	132-45M	GWT1	1790	301	96.4	96.3	0.89	0.88	9929	1.8	0.7	5.2	38	550	4340	86
2230	450-1250	GW1	132-45M	GWT1	1791	360	96.7	96.6	0.89	0.88	11897	2.0	0.8	5.7	44	630	4650	86
2610	450-1400	GW1	132-45L	GWT1	1792	421	96.9	96.8	0.89	0.88	13917	2.1	0.8	5.9	51	630	5010	86
2980	450-1400	GW1	132-45L	GWT1	1792	480	97.0	96.9	0.89	0.88	15889	2.0	0.8	5.8	54	660	5190	86
3350	500-1600	GW1			1788	546	96.9	96.8	0.88	0.86	17902	2.1	0.7	5.5	80	820	5950	83
3730	500-1600	GW1			1787	607	97.0	96.9	0.88	0.87	19944	2.0	0.7	5.4	85	820	6140	83
4100	500-1800	GW1			1788	659	97.1	97.0	0.89	0.88	21910	2.2	0.8	5.9	100	930	6800	83
4470	500-1800	GW1			1788	718	97.2	97.1	0.89	0.87	23887	2.2	0.8	6.0	110	950	7000	83
5220	560-1800	GW3			1786	830	97.1	97.0	0.90	0.89	27927	1.9	0.6	5.4	150	1260	8290	85
5960	560-1800	GW3			1786	946	97.2	97.1	0.90	0.89	31885	1.9	0.6	5.4	160	1340	8530	85
6710	560-1800	GW3			1787	1076	97.3	97.2	0.89	0.88	35878	2.1	0.7	6.0	180	1400	9020	85
7460	560-2000	GW3			1786	1169	97.4	97.3	0.91	0.90	39910	1.9	0.7	5.5	190	1470	9610	85
8200	560-2000	GW3			1787	1283	97.5	97.4	0.91	0.90	43845	2.0	0.7	5.8	210	1480	10090	85
8950	630-2240	GW3			1787	1417	97.4	97.2	0.90	0.90	47855	1.9	0.6	5.5	320	1660	12230	87
9690	630-2240	GW3			1786	1535	97.4	97.3	0.90	0.90	51841	1.8	0.6	5.1	320	1650	12230	87
10440	630-2240	GW3			1787	1652	97.5	97.3	0.90	0.91	55822	1.9	0.6	5.5	390	1760	13490	87
11190	630-2240	GW3			1786	1770	97.5	97.4	0.90	0.91	59865	1.8	0.6	5.1	390	1730	13490	87

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm^2	External max. kgm^2		
4.16kV, 60Hz																		
6-pole																		
740	400-1120	GW1	118-40M	GWT1	1189	135	95.7	95.7	0.80	0.76	5947	2.4	1.1	5.0	22	990	3060	85
930	400-1120	GW1	118-40M	GWT1	1189	166	96.0	96.0	0.81	0.77	7474	2.4	1.2	5.0	26	1080	3290	85
1110	400-1250	GW1	118-40L	GWT1	1190	198	96.2	96.1	0.81	0.76	8913	2.6	1.3	5.5	32	1300	3680	85
1300	400-1250	GW1	118-40L	GWT1	1190	235	96.2	96.2	0.80	0.75	10438	2.5	1.2	5.2	34	1300	3800	85
1490	450-1250	GW1	132-45M	GWT1	1191	259	96.2	96.2	0.83	0.80	11954	1.9	0.7	5.0	51	1270	4380	86
1670	450-1250	GW1	132-45M	GWT1	1191	287	96.2	96.3	0.84	0.81	13398	1.8	0.7	4.8	55	1280	4530	86
1860	450-1250	GW1	132-45M	GWT1	1191	319	96.4	96.4	0.84	0.81	14922	1.8	0.7	4.8	59	1350	4680	86
2230	450-1400	GW1	132-45L	GWT1	1191	382	96.6	96.6	0.84	0.81	17890	1.9	0.7	5.0	71	1540	5190	86
2610	500-1600	GW1	150-50M	GWT1	1190	442	96.6	96.5	0.85	0.83	20957	2.0	0.9	5.3	100	1710	6270	79
2980	500-1600	GW1	150-50M	GWT1	1190	498	96.7	96.7	0.86	0.84	23927	1.9	0.9	5.3	120	1930	6630	79
3350	500-1600	GW1	150-50M	GWT1	1190	580	96.7	96.7	0.83	0.81	26898	2.0	1.0	5.4	120	1860	6820	79
3730	500-1800	GW1	150-50L	GWT1	1190	630	96.8	96.8	0.85	0.83	29950	1.9	0.9	5.3	140	1980	7240	79
4100	500-1800	GW1	150-50L	GWT1	1190	684	96.8	96.9	0.86	0.84	32920	1.9	0.9	5.3	150	2150	7600	79
4470	560-1800	GW1			1192	720	96.9	96.9	0.89	0.88	35831	2.0	0.6	4.9	230	2870	9160	80
5220	560-2000	GW1			1192	840	97.0	97.0	0.89	0.88	41843	1.9	0.6	4.8	250	2950	9690	80
5960	560-2000	GW1			1192	959	97.0	97.1	0.89	0.88	47775	1.9	0.6	4.9	270	3050	10150	80
6710	630-2240	GW3			1189	1091	97.0	96.8	0.88	0.85	53922	2.1	0.7	5.9	410	3030	12030	83
7460	630-2240	GW3			1189	1199	97.1	96.9	0.89	0.86	59949	2.0	0.7	5.9	440	3020	12630	83
8200	630-2240	GW3			1189	1316	97.2	97.0	0.89	0.86	65896	2.1	0.7	6.0	480	3090	13240	83
8-pole																		
590	400-1120	GW1	118-40M	GWT1	893	107	95.1	95.2	0.81	0.77	6313	1.9	0.7	4.9	30	1470	3260	80
670	400-1120	GW1	118-40M	GWT1	893	121	95.3	95.4	0.81	0.77	7169	1.9	0.7	4.8	32	1540	3380	80
740	400-1120	GW1	118-40M	GWT1	893	133	95.4	95.5	0.81	0.77	7918	2.0	0.8	5.0	35	1670	3490	80
930	400-1250	GW1	118-40L	GWT1	894	169	95.8	95.7	0.80	0.76	9940	2.1	0.8	5.2	42	1970	3870	80
1110	450-1250	GW1	132-45M	GWT1	892	197	95.7	95.6	0.82	0.79	11890	1.8	0.7	4.1	58	2960	4310	82
1300	450-1250	GW1	132-45M	GWT1	893	230	95.9	95.8	0.82	0.79	13910	1.9	0.7	4.1	66	3290	4600	82
1490	450-1400	GW1	132-45L	GWT1	893	263	96.0	95.9	0.82	0.79	15943	2.0	0.7	4.4	80	3800	5100	82
1670	450-1400	GW1	132-45L	GWT1	893	294	96.2	96.1	0.82	0.79	17869	1.9	0.7	4.3	84	3940	5250	82
1860	500-1600	GW1	150-50M	GWT1	892	336	96.2	96.1	0.80	0.78	19924	1.7	0.9	5.0	120	2810	6240	84
2230	500-1600	GW1	150-50M	GWT1	893	397	96.4	96.3	0.81	0.78	23861	1.7	0.9	5.0	140	3240	6780	84
2610	500-1800	GW1	150-50L	GWT1	893	476	96.5	96.4	0.79	0.76	27927	1.7	0.9	5.2	150	3430	7200	84
2980	500-1800	GW1	150-50L	GWT1	893	542	96.6	96.5	0.79	0.76	31885	1.7	0.9	5.1	170	3630	7560	84
3350	560-1800	GW1	170-56M	GWT1	894	580	96.6	96.4	0.83	0.79	35804	2.3	0.8	5.6	240	5460	8720	85
3730	560-1800	GW1	170-56M	GWT1	894	630	96.7	96.5	0.85	0.81	39866	2.2	0.7	5.5	270	5850	9160	85
4100	560-2000	GW1	170-56L	GWT1	894	692	96.8	96.6	0.85	0.82	43820	2.2	0.7	5.6	290	6110	9670	85
4470	560-2000	GW1	170-56L	GWT1	894	754	96.9	96.7	0.85	0.81	47775	2.3	0.8	5.7	320	6610	10100	85
5220	630-2240	GW3	190-63L	GWT1	889	871	96.8	96.5	0.86	0.83	56104	2.0	0.6	5.7	490	5780	11830	86
5960	630-2240	GW3	190-63L	GWT1	889	993	96.9	96.7	0.86	0.84	64058	2.0	0.6	5.6	560	5950	12700	86

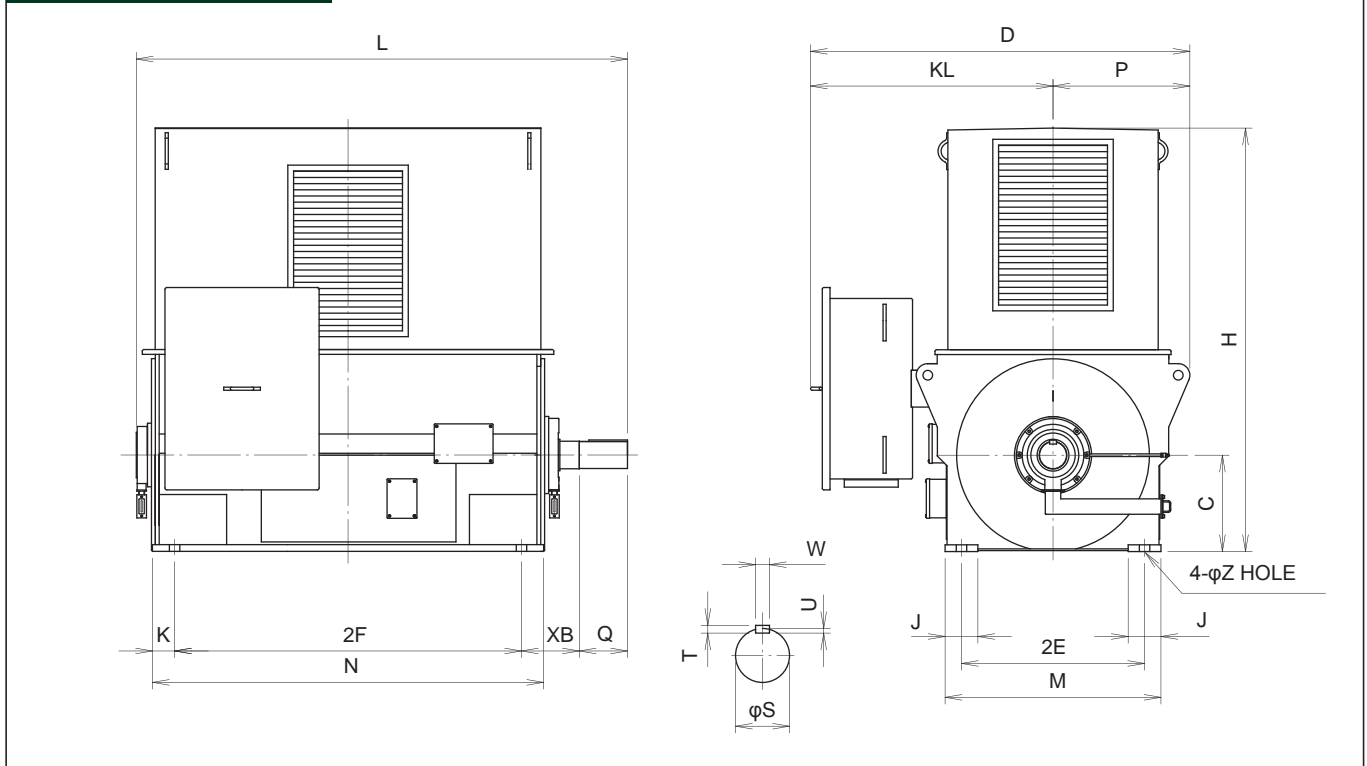
■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm ²	External max. kgm ²		
4.16kV, 60Hz																		
10-pole																		
440	400-1120	GW1	118-40M	GWT1	712	90	94.3	94.1	0.72	0.66	5905	2.0	0.9	4.7	26	1800	2990	78
520	400-1120	GW1	118-40M	GWT1	712	105	94.5	94.4	0.73	0.67	6978	2.0	0.9	4.7	31	2030	3210	78
590	400-1120	GW1	118-40M	GWT1	712	119	94.7	94.6	0.73	0.67	7918	2.0	0.9	4.7	34	2170	3320	78
670	400-1250	GW1	118-40L	GWT1	712	137	94.7	94.6	0.72	0.66	8991	2.0	0.9	4.8	36	2220	3480	78
740	400-1250	GW1	118-40L	GWT1	712	151	95.0	94.9	0.72	0.66	9931	2.1	0.9	4.9	41	2520	3700	78
930	450-1250	GW1	132-45M	GWT1	713	174	95.2	95.2	0.78	0.73	12463	1.8	0.7	4.4	60	3090	4300	80
1110	450-1250	GW1	132-45M	GWT1	713	210	95.3	95.2	0.77	0.72	14875	1.9	0.8	4.6	69	3420	4600	80
1300	450-1400	GW1	132-45L	GWT1	713	246	95.6	95.5	0.77	0.71	17421	1.9	0.8	4.7	82	3960	5100	80
1490	500-1600	GW1	150-50M	GWT1	713	274	95.8	95.8	0.79	0.75	19968	1.9	0.7	4.8	110	4180	6030	82
1670	500-1600	GW1	150-50M	GWT1	713	299	95.9	95.9	0.81	0.77	22380	1.8	0.6	4.6	130	4530	6390	82
1860	500-1600	GW1	150-50M	GWT1	713	337	96.0	96.0	0.80	0.75	24926	1.9	0.6	4.7	140	4580	6570	82
2230	500-1800	GW1	150-50L	GWT1	713	403	96.1	96.1	0.80	0.76	29884	1.9	0.6	4.8	160	5320	7340	82
2610	560-1800	GW1	170-56M	GWT1	714	482	96.5	96.3	0.78	0.74	34928	2.2	0.9	5.1	240	6590	8560	84
2980	560-1800	GW1	170-56M	GWT1	713	542	96.6	96.5	0.79	0.75	39935	2.1	0.8	4.9	260	7070	9000	84
3350	560-2000	GW1	170-56L	GWT1	713	601	96.7	96.6	0.80	0.75	44893	2.0	0.8	4.9	290	7430	9510	84
3730	560-2000	GW1	170-56L	GWT1	714	677	96.8	96.7	0.79	0.74	49916	2.1	0.8	5.0	310	8150	9950	84
4100	630-2240	GW3	190-63L	GWT1	715	717	96.9	96.8	0.82	0.79	54791	1.9	0.7	5.0	500	9550	11900	84
4470	630-2240	GW3	190-63L	GWT1	715	771	97.0	97.0	0.83	0.80	59735	1.7	0.6	4.7	520	9420	12320	84
12-pole																		
440	400-1120	GW1	118-40M	GWT1	593	94	94.2	94.0	0.69	0.62	7090	2.1	0.8	4.0	34	3580	3320	78
520	400-1250	GW1	118-40L	GWT1	593	112	94.1	93.9	0.69	0.62	8379	2.1	0.8	4.1	38	4010	3580	78
590	400-1250	GW1	118-40L	GWT1	592	125	94.1	94.1	0.70	0.64	9523	1.9	0.7	3.9	41	4090	3700	78
670	450-1250	GW1	132-45M	GWT1	593	139	94.8	94.5	0.71	0.64	10796	2.1	0.8	4.2	65	5220	4470	80
740	450-1250	GW1	132-45M	GWT1	593	151	94.8	94.6	0.72	0.66	11924	2.0	0.8	4.1	69	5410	4610	80
930	450-1400	GW1	132-45L	GWT1	593	189	95.1	95.0	0.72	0.66	14985	2.0	0.8	4.1	82	6150	5110	80
1110	500-1600	GW1	150-50M	GWT1	593	222	95.3	95.1	0.73	0.67	17885	2.3	0.7	4.3	110	7610	6040	82
1300	500-1600	GW1	150-50M	GWT1	593	252	95.5	95.3	0.75	0.69	20947	2.2	0.7	4.3	140	8760	6580	82
1490	500-1800	GW1	150-50L	GWT1	593	289	95.6	95.4	0.75	0.69	24008	2.2	0.7	4.2	150	9350	7000	82
1670	500-1800	GW1	150-50L	GWT1	593	328	95.6	95.5	0.74	0.68	26909	2.2	0.7	4.3	160	10120	7360	82
1860	560-1800	GW1	170-56M	GWT1	592	358	95.1	94.9	0.76	0.72	30021	2.1	0.6	4.4	220	8820	8280	84
2230	560-1800	GW1	170-56M	GWT1	592	422	95.3	95.2	0.77	0.72	35992	2.0	0.6	4.4	260	9720	8930	84
2610	560-2000	GW1	170-56L	GWT1	592	500	95.5	95.4	0.76	0.71	42126	2.1	0.7	4.6	310	11570	9880	84
2980	630-2000	GW3	190-63M	GWT1	595	573	96.4	96.3	0.75	0.70	47855	1.9	0.7	5.0	440	10960	11030	84
3350	630-2240	GW3	190-63L	GWT1	595	643	96.5	96.4	0.75	0.71	53797	1.9	0.6	4.9	480	11720	11690	84
3730	630-2240	GW3	190-63L	GWT1	595	715	96.6	96.5	0.75	0.70	59899	1.9	0.7	5.0	520	12670	12270	84

Dimension drawings

Antifriction bearings

Drawing No.: GW1



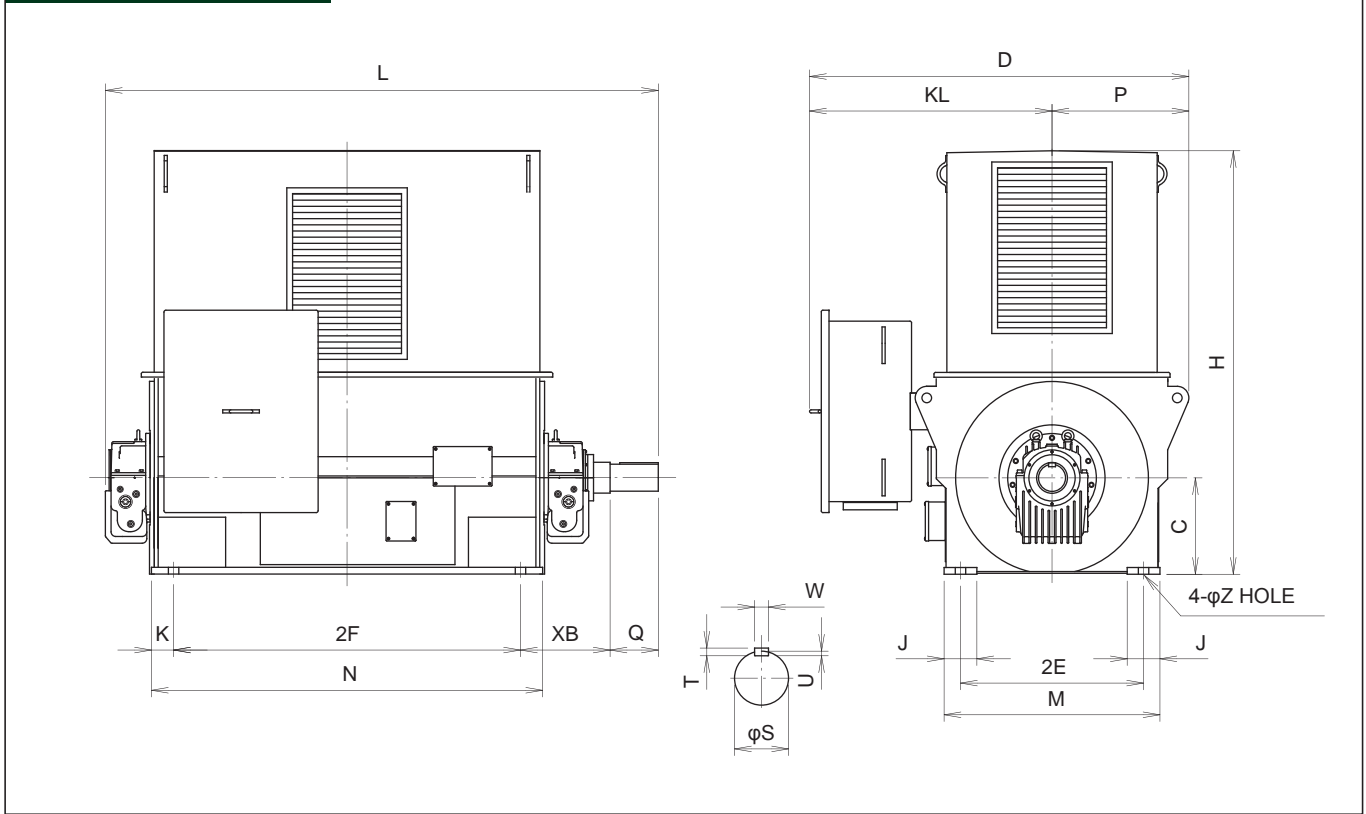
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Frame	Dimensions													Shaft end		Key size			
	C	D	2E	2F	H	J	K	L	M	N	P	Z	XB	KL	Q	S	T	U	W
Frame No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4-pole																			
400-1120	400	1820	800	1120	1700	170	160	1950	920	1440	610	42	310	1210	250	110	16	10	28
400-1250	400	1820	800	1250	1700	170	160	2080	920	1570	610	42	310	1210	250	110	16	10	28
450-1250	450	1920	900	1250	1950	170	205	2170	1020	1660	660	54	355	1260	250	120	18	11	32
450-1400	450	1920	900	1400	1950	170	205	2320	1020	1810	660	54	355	1260	250	120	18	11	32
500-1600	500	2040	1000	1600	2200	170	125	2410	1120	1850	730	60	280	1310	300	140	20	12	36
500-1800	500	2040	1000	1800	2200	170	125	2610	1120	2050	730	60	280	1310	300	140	20	12	36
6-pole																			
400-1120	400	1820	800	1120	1620	170	160	1950	920	1440	610	42	310	1210	250	110	16	10	28
400-1250	400	1820	800	1250	1620	170	160	2080	920	1570	610	42	310	1210	250	110	16	10	28
450-1250	450	1920	900	1250	1860	170	205	2170	1020	1660	660	54	355	1260	250	140	20	12	36
450-1400	450	1920	900	1400	1860	170	205	2320	1020	1810	660	54	355	1260	250	140	20	12	36
500-1600	500	2040	1000	1600	2060	170	125	2420	1120	1850	730	60	280	1310	300	170	22	13	40
500-1800	500	2040	1000	1800	2060	170	125	2620	1120	2050	730	60	280	1310	300	170	22	13	40
560-1800	560	2160	1120	1800	2280	215	160	2750	1240	2120	790	68	320	1370	350	190	25	15	45
560-2000	560	2160	1120	2000	2280	215	160	2950	1240	2320	790	68	320	1370	350	190	25	15	45
8-pole and above																			
400-1120	400	1820	800	1120	1620	170	160	1950	920	1440	610	42	310	1210	250	120	18	11	32
400-1250	400	1820	800	1250	1620	170	160	2080	920	1570	610	42	310	1210	250	120	18	11	32
450-1250	450	1920	900	1250	1860	170	205	2170	1020	1660	660	54	355	1260	250	140	20	12	36
450-1400	450	1920	900	1400	1860	170	205	2320	1020	1810	660	54	355	1260	250	140	20	12	36
500-1600	500	2040	1000	1600	2060	170	125	2420	1120	1850	730	60	280	1310	300	170	22	13	40
500-1800	500	2040	1000	1800	2060	170	125	2620	1120	2050	730	60	280	1310	300	170	22	13	40
560-1800	560	2160	1120	1800	2280	215	160	2750	1240	2120	790	68	320	1370	350	190	25	15	45
560-2000	560	2160	1120	2000	2280	215	160	2950	1240	2320	790	68	320	1370	350	190	25	15	45

■ Dimension drawings

Self-cooled sleeve bearings

Drawing No.: GW2

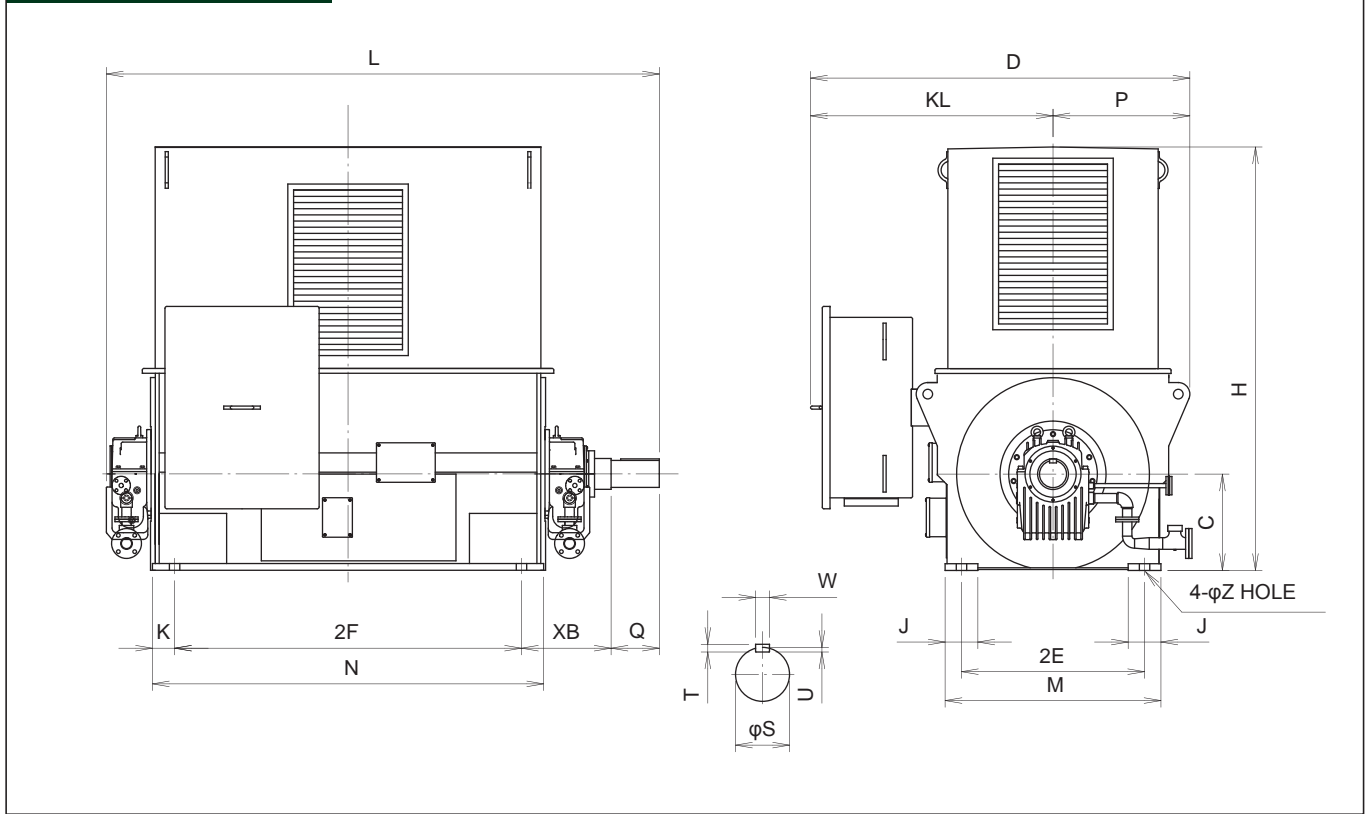


Frame	Dimensions														Shaft end		Key size		
	C	D	2E	2F	H	J	K	L	M	N	P	Z	XB	KL	Q	S	T	U	W
Frame No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
2-pole																			
400-1120	400	1820	800	1120	1800	170	290	2040	920	1570	610	42	310	1210	170	85	14	9	22
450-1400	450	1920	900	1400	2100	170	205	2270	1020	1810	660	54	355	1260	210	90	14	9	25

■ Dimension drawings

Forced feed oil lubricated sleeve bearings

Drawing No.: GW3



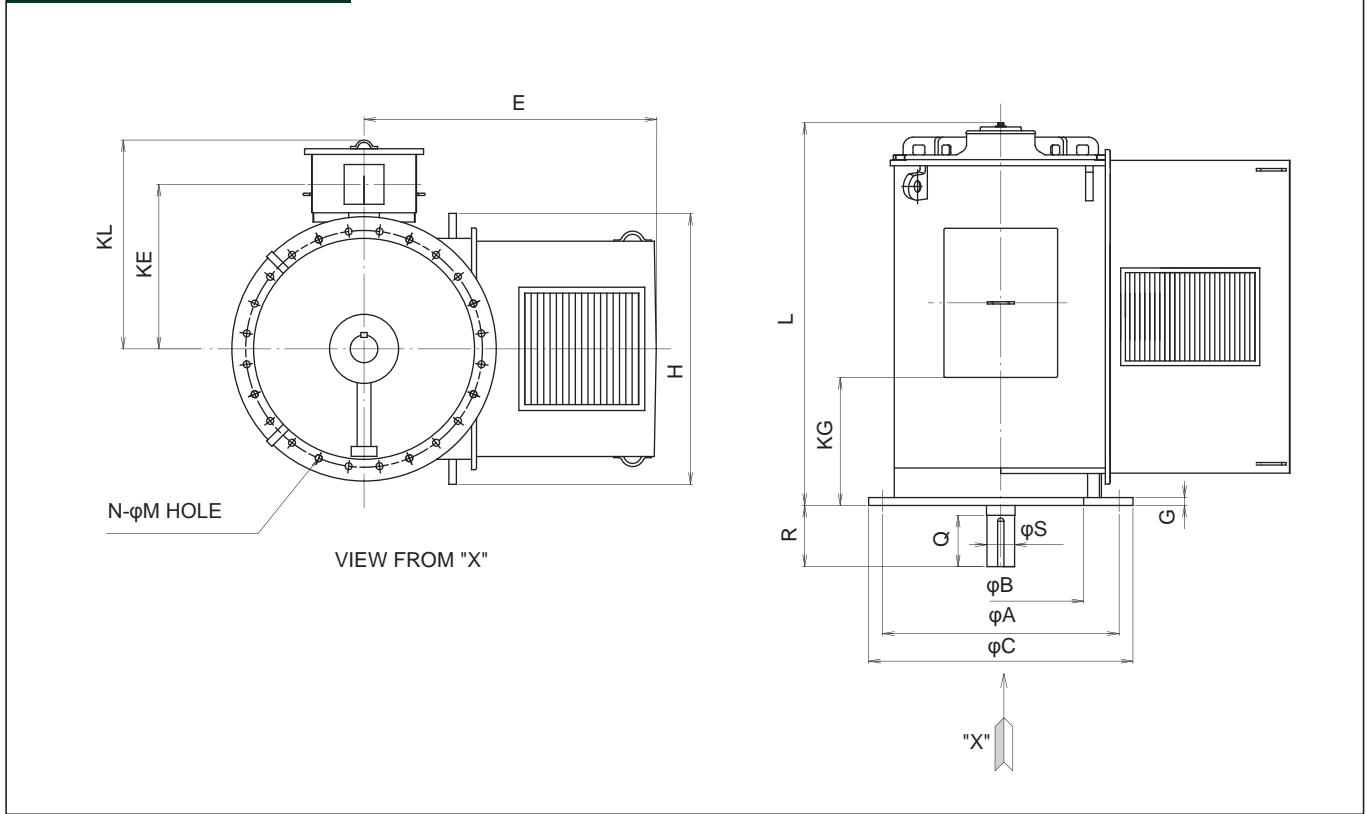
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Frame	Dimensions															Shaft end		Key size		
	C	D	2E	2F	H	J	K	L	M	N	P	Z	XB	KL	Q	S	T	U	W	
Frame No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	
2-pole																				
400-1120	400	1820	800	1120	1800	170	290	2130	920	1570	610	42	420	1210	170	85	14	9	22	
450-1400	450	1920	900	1400	2100	170	205	2410	1020	1810	660	54	465	1260	210	90	14	9	25	
500-1600	500	2040	1000	1600	2200	170	325	2730	1120	2050	730	60	400	1310	250	105	16	10	28	
560-1800	560	2160	1120	1800	2470	215	360	3020	1240	2320	790	68	435	1370	250	125	18	11	32	
630-2000	630	2310	1260	2000	2760	230	110	3170	1380	2460	860	66	400	1450	250	140	20	12	36	
4-pole																				
560-1800	560	2160	1120	1800	2320	215	160	3160	1240	2120	790	68	565	1370	350	170	22	13	40	
560-2000	560	2160	1120	2000	2320	215	160	3360	1240	2320	790	68	565	1370	350	170	22	13	40	
630-2000	630	2310	1260	2000	2460	230	110	3250	1380	2220	860	66	500	1450	350	210	28	17	50	
630-2240	630	2310	1260	2240	2760	230	110	3490	1380	2460	860	66	500	1450	350	210	28	17	50	
6-pole																				
630-2000	630	2310	1260	2000	2460	230	110	3420	1380	2220	860	66	580	1450	350	210	28	17	50	
630-2240	630	2310	1260	2240	2460	230	110	3660	1380	2460	860	66	580	1450	350	210	28	17	50	
8-pole and above																				
630-2000	630	2310	1260	2000	2460	230	110	3420	1380	2220	860	66	580	1450	350	210	28	17	50	
630-2240	630	2310	1260	2240	2460	230	110	3660	1380	2460	860	66	580	1450	350	210	28	17	50	

■ Dimension drawings

Antifriction bearings

Drawing No.: GWT1



Frame	Dimensions												Shaft end		
	A	B	C	E	G	H	KE	KG	L	M	N	KL	Q	R	S
Frame No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4-pole															
118-40M	1180	720	1250	1370	35	1310	970	920	1910	28	8	1280	250	300	110
118-40L	1180	720	1250	1370	35	1310	970	1040	2040	28	8	1280	250	300	110
132-45M	1320	830	1400	1600	35	1410	1020	1070	2130	28	16	1330	250	300	120
132-45L	1320	830	1400	1600	35	1410	1020	1240	2290	28	16	1330	250	300	120
6-pole															
118-40M	1180	720	1250	1290	35	1310	975	820	1910	28	8	1285	250	300	110
118-40L	1180	720	1250	1290	35	1310	975	940	2040	28	8	1285	250	300	110
132-45M	1320	830	1400	1500	35	1410	1020	970	2130	28	16	1330	250	300	140
132-45L	1320	830	1400	1500	35	1410	1020	1130	2290	28	16	1330	250	300	140
150-50M	1500	940	1600	1650	40	1510	1070	1120	2320	28	24	1380	300	350	170
150-50L	1500	940	1600	1650	40	1510	1070	1320	2520	28	24	1380	300	350	170
8-pole and above															
118-40M	1180	720	1250	1290	35	1310	970	820	1910	28	8	1280	250	300	120
118-40L	1180	720	1250	1290	35	1310	970	940	2040	28	8	1280	250	300	120
132-45M	1320	830	1400	1500	35	1410	1020	970	2130	28	16	1330	250	300	140
132-45L	1320	830	1400	1500	35	1410	1020	1130	2290	28	16	1330	250	300	140
150-50M	1500	940	1600	1650	40	1510	1070	1120	2320	28	24	1380	300	350	170
150-50L	1500	940	1600	1650	40	1510	1070	1320	2520	28	24	1380	300	350	170
170-56M	1700	1060	1800	1830	45	1630	1130	1300	2600	28	24	1440	350	400	190
170-56L	1700	1060	1800	1830	45	1630	1130	1500	2800	28	24	1440	350	400	190
190-63M	1900	1200	2000	-	45	1830	1230	1370	2770	35	24	1540	350	400	210
190-63L	1900	1200	2000	-	45	1830	1230	1610	3010	35	24	1540	350	400	210

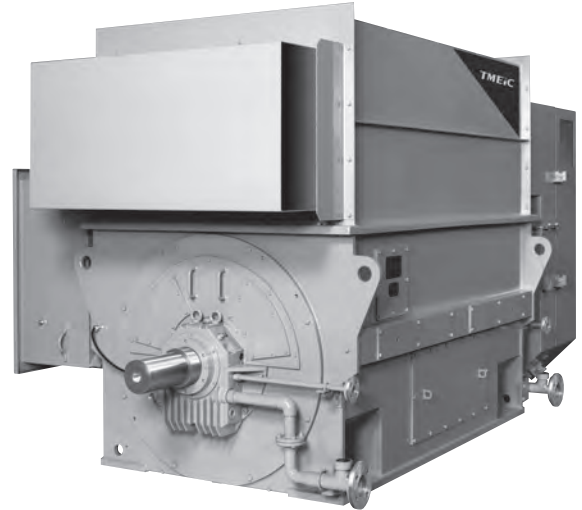
Technical Data

IC611 (TEAAC – Totally Enclosed Air-to-Air-Cooled)

Air-cooled motors

■ Technical data

IC611 (TEAAC)	
Rated voltage	Up to 11.0kV
Rated frequency	50/60Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3/IM V1
Degree of protection	IP55
Cooling method	IC611
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height	400 to 630mm
Bearings	Antifriction bearings, sleeve bearings
Cage material	Copper
Frame design for shaft heights 400 to 630mm	Frame: Steel Top cover: Steel
Tube material for air cooler	Aluminum/Stainless as option
Standards	IEC, NEMA, JEC



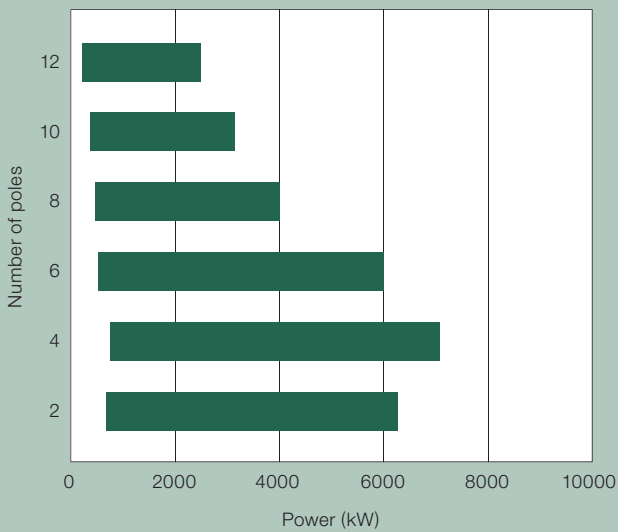
■ Power range – Shaft height: 400 to 630mm

Insulation system, thermal class: 155 (F), utilized to 130 (B).

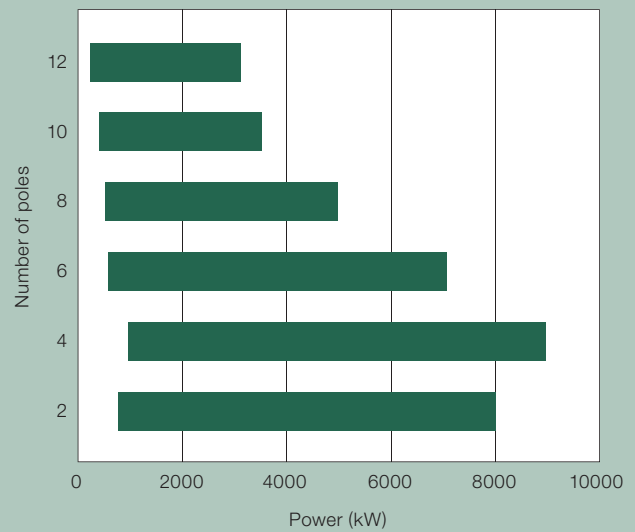
Ambient temperature: up to 40°C

Installation altitude: up to 1000m

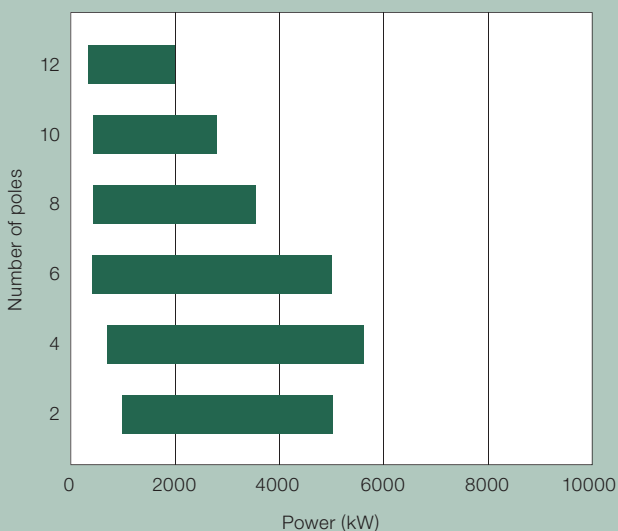
3.3 to 6.6kV, 50Hz



3.3 to 6.6kV, 60Hz



11kV, 50Hz



3

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current A	Efficiency		Power factor		Torque Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor	External max.		
3.3kV, 50Hz																		
2-pole																		
800	400-1120	GF2			2972	164	96.1	95.9	0.89	0.87	2572	2.4	1.0	5.8	8	120	3280	85
900	400-1120	GF2			2969	180	96.2	96.1	0.91	0.89	2896	2.2	0.9	5.4	9	120	3400	85
1000	400-1120	GF2			2970	200	96.3	96.2	0.91	0.89	3217	2.3	1.0	5.7	10	130	3540	85
1120	400-1120	GF2			2972	224	96.5	96.4	0.91	0.89	3601	2.5	1.1	6.2	11	130	3670	85
1250	450-1400	GF2			2968	260	95.7	95.4	0.88	0.86	4024	2.3	0.7	5.3	14	150	4020	88 ¹⁾
1400	450-1400	GF2			2968	287	95.9	95.6	0.89	0.87	4507	2.2	0.7	5.4	16	150	4240	88 ¹⁾
1600	450-1400	GF2			2968	324	96.2	95.9	0.90	0.88	5151	2.2	0.7	5.4	17	150	4460	88 ¹⁾
1800	450-1400	GF2			2968	364	96.3	96.1	0.90	0.88	5795	2.3	0.8	5.7	19	160	4680	88 ¹⁾
2000	450-1400	GF2			2969	403	96.5	96.3	0.90	0.88	6436	2.4	0.8	6.1	20	160	4900	88 ¹⁾
2250	500-1600	GF3			2983	459	96.5	96.1	0.89	0.88	7207	2.0	0.8	5.4	35	210	6250	88 ¹⁾
2500	500-1600	GF3			2982	504	96.6	96.4	0.90	0.89	8011	2.0	0.8	5.4	40	220	6710	88 ¹⁾
2800	500-1600	GF3			2984	563	96.8	96.5	0.90	0.88	8966	2.2	0.9	6.1	42	230	6930	88 ¹⁾
4-pole																		
1000	400-1120	GF1	118-40M	GFT1	1486	207	96.4	96.2	0.88	0.86	6430	2.0	1.1	5.8	22	450	3560	85
1120	400-1250	GF1	118-40L	GFT1	1487	231	96.6	96.4	0.88	0.86	7197	2.1	1.2	6.2	26	490	3940	85
1250	400-1250	GF1	118-40L	GFT1	1487	257	96.7	96.6	0.88	0.86	8032	2.1	1.2	6.2	28	490	4060	85
1400	450-1250	GF1	132-45M	GFT1	1486	279	96.7	96.5	0.91	0.90	9002	2.4	1.0	6.4	44	710	4830	86
1600	450-1250	GF1	132-45M	GFT1	1486	318	96.9	96.7	0.91	0.90	10288	2.4	1.0	6.4	47	750	4990	86
1800	450-1400	GF1	132-45L	GFT1	1487	357	97.0	96.8	0.91	0.89	11566	2.6	1.1	7.0	54	780	5420	86
2000	450-1400	GF1	132-45L	GFT1	1487	396	97.2	97.0	0.91	0.89	12851	2.6	1.1	7.1	57	840	5570	86
2250	500-1600	GF1			1486	452	96.9	96.9	0.90	0.90	14467	2.1	0.7	5.2	80	1050	6280	86
2500	500-1600	GF1			1487	502	97.0	96.9	0.90	0.89	16064	2.2	0.8	5.5	85	1070	6470	86
2800	500-1800	GF1			1488	561	97.1	97.0	0.90	0.88	17980	2.4	0.9	6.1	96	1170	7000	86
3150	500-1800	GF1			1488	630	97.2	97.2	0.90	0.89	20227	2.4	0.9	6.1	110	1250	7390	86
3550	560-1800	GF3			1491	702	97.3	97.0	0.91	0.90	22750	2.2	0.7	5.7	170	1890	9300	86
4000	560-1800	GF3			1491	790	97.4	97.2	0.91	0.90	25634	2.2	0.7	5.7	190	2000	9980	86
4500	560-2000	GF3			1492	888	97.5	97.3	0.91	0.89	28819	2.3	0.8	6.0	190	2070	10230	86
5000	560-2000	GF3			1492	996	97.6	97.4	0.90	0.88	32021	2.5	0.9	6.5	210	2180	10720	86
6-pole																		
630	400-1120	GF1	118-40M	GFT1	992	138	95.5	95.3	0.84	0.80	6068	2.4	1.1	5.6	26	970	3430	83
710	400-1120	GF1	118-40M	GFT1	992	154	95.4	95.4	0.85	0.82	6839	2.2	1.0	5.4	28	1010	3550	83
800	400-1250	GF1	118-40L	GFT1	992	173	95.6	95.6	0.85	0.81	7706	2.3	1.1	5.6	32	1120	3870	83
900	400-1250	GF1	118-40L	GFT1	992	194	95.8	95.7	0.85	0.81	8669	2.3	1.1	5.6	34	1150	3980	83
1000	450-1250	GF1	132-45M	GFT1	990	208	95.9	95.8	0.88	0.86	9651	1.9	0.8	5.2	55	1480	4780	83
1120	450-1250	GF1	132-45M	GFT1	990	232	96.0	95.9	0.88	0.86	10810	1.9	0.8	5.2	59	1490	4930	83
1250	450-1400	GF1	132-45L	GFT1	991	259	96.3	96.2	0.88	0.85	12052	2.1	0.9	5.6	67	1670	5330	83
1400	450-1400	GF1	132-45L	GFT1	990	290	96.3	96.3	0.88	0.87	13512	1.9	0.8	5.2	71	1730	5480	83
1600	500-1600	GF1	150-50M	GFT1	991	347	96.3	96.1	0.84	0.81	15427	2.1	1.1	5.6	90	1780	6310	84
1800	500-1600	GF1	150-50M	GFT1	991	385	96.4	96.3	0.85	0.83	17355	2.0	1.0	5.7	100	1970	6670	84
2000	500-1600	GF1	150-50M	GFT1	990	423	96.4	96.4	0.86	0.84	19303	1.9	1.0	5.3	110	1970	6860	84
2250	500-1600	GF1	150-50M	GFT1	991	480	96.6	96.5	0.85	0.83	21694	2.0	1.1	5.7	120	2120	7230	84
2500	500-1800	GF1	150-50L	GFT1	991	520	96.7	96.7	0.87	0.85	24104	2.0	1.0	5.6	150	2500	8110	84
2800	560-1800	GF3			994	562	96.9	96.7	0.90	0.87	26915	2.3	0.8	6.1	210	2930	9230	85
3150	560-1800	GF3			994	625	96.9	96.8	0.91	0.89	30280	2.1	0.8	5.7	230	2990	9690	85
3550	560-2000	GF3			994	705	96.9	96.9	0.91	0.89	34125	2.1	0.8	5.6	240	3010	10110	85
4000	560-2000	GF3			994	801	97.1	97.0	0.90	0.88	38450	2.2	0.8	6.1	270	3440	10800	85

1) Sound pressure level with silencer. Please note frame size may be changed according to specification.

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current A	Efficiency		Power factor		Torque Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor	External max.		
3.3kV, 60Hz																		
2-pole																		
900	400-1120	GF2			3569	183	96.0	95.6	0.90	0.88	2409	2.3	0.9	5.7	8	89	3440	86
1000	400-1120	GF2			3569	203	96.2	95.9	0.90	0.89	2677	2.3	0.9	5.7	9	88	3560	86
1120	400-1120	GF2			3568	224	96.2	96.0	0.91	0.90	2999	2.2	0.9	5.6	10	91	3710	86
1250	400-1120	GF2			3568	250	96.5	96.2	0.91	0.90	3347	2.2	0.9	5.7	11	94	3840	86
1400	450-1400	GF2			3567	293	95.2	94.4	0.88	0.86	3750	2.4	0.7	5.6	14	100	4120	88 ¹⁾
1600	450-1400	GF2			3566	330	95.5	94.8	0.89	0.87	4287	2.4	0.7	5.7	16	110	4340	88 ¹⁾
1800	450-1400	GF2			3567	370	95.8	95.2	0.89	0.87	4822	2.5	0.7	5.9	17	110	4560	88 ¹⁾
2000	450-1400	GF2			3567	401	96.0	95.5	0.91	0.89	5357	2.5	0.8	6.2	20	110	5010	88 ¹⁾
2250	450-1400	GF2			3566	450	96.2	95.7	0.91	0.89	6029	2.4	0.7	5.9	20	110	5010	88 ¹⁾
2500	500-1600	GF3			3583	511	96.2	95.7	0.89	0.87	6667	2.2	0.7	5.8	35	150	6290	88 ¹⁾
2800	500-1600	GF3			3584	571	96.4	95.9	0.89	0.88	7465	2.3	0.8	6.3	40	150	6760	88 ¹⁾
3150	500-1600	GF3			3582	634	96.6	96.2	0.90	0.89	8403	2.0	0.7	5.6	42	150	6980	88 ¹⁾
4-pole																		
1120	400-1120	GF1	118-40M	GFT1	1786	232	96.2	95.9	0.88	0.87	5992	1.9	1.0	5.6	21	290	3370	88
1250	400-1120	GF1	118-40M	GFT1	1787	261	96.5	96.1	0.87	0.84	6684	2.1	1.1	6.2	22	300	3580	88
1400	400-1250	GF1	118-40L	GFT1	1787	285	96.7	96.4	0.89	0.87	7486	2.1	1.1	6.1	28	350	4080	88
1600	450-1250	GF1	132-45M	GFT1	1783	316	96.4	96.1	0.92	0.91	8574	2.1	0.8	5.7	44	510	4780	88 ¹⁾
1800	450-1250	GF1	132-45M	GFT1	1784	355	96.6	96.3	0.92	0.91	9641	2.1	0.8	5.8	47	520	4940	88 ¹⁾
2000	450-1400	GF1	132-45L	GFT1	1784	393	96.9	96.6	0.92	0.92	10712	2.2	0.8	5.9	54	560	5360	88 ¹⁾
2250	450-1400	GF1	132-45L	GFT1	1784	442	97.0	96.7	0.92	0.91	12051	2.3	0.9	6.3	57	580	5520	88 ¹⁾
2500	500-1600	GF1			1787	502	96.9	96.7	0.90	0.89	13367	2.3	0.8	5.9	80	740	6260	88 ¹⁾
2800	500-1600	GF1			1787	561	97.1	96.9	0.90	0.89	14971	2.3	0.8	5.8	85	750	6450	88 ¹⁾
3150	500-1800	GF1			1786	624	97.1	97.0	0.91	0.90	16852	2.2	0.8	5.7	96	790	6980	88 ¹⁾
3550	500-1800	GF1			1787	710	97.3	97.1	0.90	0.89	18982	2.4	0.9	6.2	110	860	7360	88 ¹⁾
4000	560-1800	GF3			1791	797	97.6	97.4	0.90	0.89	21340	2.3	0.7	5.9	160	1310	9060	88 ¹⁾
4500	560-1800	GF3			1790	877	97.6	97.5	0.92	0.91	24021	2.1	0.6	5.4	180	1310	9540	88 ¹⁾
5000	560-2000	GF3			1790	974	97.7	97.6	0.92	0.91	26690	2.1	0.7	5.6	190	1420	10230	88 ¹⁾
5600	560-2000	GF3			1791	1089	97.8	97.7	0.92	0.91	29876	2.3	0.7	5.9	210	1500	10720	88 ¹⁾
6-pole																		
800	400-1120	GF1	118-40M	GFT1	1191	173	95.4	95.3	0.85	0.82	6418	2.1	0.9	5.2	26	670	3450	85
900	400-1120	GF1	118-40M	GFT1	1191	194	95.6	95.5	0.85	0.83	7220	2.1	0.9	5.2	28	670	3570	85
1000	400-1250	GF1	118-40L	GFT1	1192	215	95.8	95.7	0.85	0.83	8016	2.2	1.0	5.5	32	770	3890	85
1120	400-1250	GF1	118-40L	GFT1	1192	241	96.0	95.8	0.85	0.82	8978	2.2	1.0	5.5	34	790	4010	85
1250	450-1250	GF1	132-45M	GFT1	1191	259	96.2	96.0	0.88	0.85	10028	2.1	0.8	5.6	59	1100	4940	85
1400	450-1400	GF1	132-45L	GFT1	1191	293	96.4	96.2	0.87	0.85	11232	2.1	0.9	5.8	63	1140	5190	85
1600	450-1400	GF1	132-45L	GFT1	1191	330	96.5	96.3	0.88	0.86	12836	2.1	0.8	5.7	71	1220	5490	85
1800	500-1600	GF1	150-50M	GFT1	1191	390	96.2	95.9	0.84	0.81	14441	2.2	1.0	5.9	90	1220	6310	85
2000	500-1600	GF1	150-50M	GFT1	1190	423	96.4	96.1	0.86	0.84	16059	2.0	0.9	5.6	100	1380	6670	85
2250	500-1600	GF1	150-50M	GFT1	1190	475	96.5	96.2	0.86	0.84	18066	2.0	0.9	5.6	110	1410	6860	85
2500	500-1600	GF1	150-50M	GFT1	1190	527	96.6	96.4	0.86	0.83	20073	2.0	1.0	5.8	120	1450	7230	85
2800	500-1800	GF1	150-50L	GFT1	1190	590	96.7	96.5	0.86	0.84	22482	2.0	1.0	5.7	130	1520	7740	85
3150	500-1800	GF1	150-50L	GFT1	1191	662	96.9	96.7	0.86	0.83	25271	2.1	1.0	6.1	150	1710	8110	85
3550	560-1800	GF3			1194	721	96.9	96.6	0.89	0.86	28409	2.1	0.7	5.5	180	1760	8800	85
4000	560-1800	GF3			1194	812	96.9	96.7	0.89	0.87	32010	2.1	0.7	5.6	210	1910	9260	85
4500	560-1800	GF3			1194	902	97.0	96.8	0.90	0.87	36011	2.2	0.8	6.1	230	1800	9720	85
5000	560-2000	GF3			1194	1000	97.2	97.0	0.90	0.88	40012	2.2	0.8	6.0	270	2370	10840	85

1) Sound pressure level with silencer. Please note frame size may be changed according to specification.

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos ϕ	3/4 load cos ϕ					Motor	External max.		
6.6kV, 50Hz																		
2-pole																		
710	400-1120	GF2			2973	75	95.7	95.4	0.87	0.84	2282	2.5	1.0	5.8	7	110	3180	85
800	400-1120	GF2			2970	84	95.7	95.5	0.88	0.85	2574	2.2	0.8	5.2	7	110	3180	85
900	400-1120	GF2			2971	93	95.9	95.8	0.89	0.86	2894	2.2	0.9	5.4	8	120	3300	85
1000	400-1120	GF2			2972	103	96.1	96.0	0.89	0.87	3215	2.3	1.0	5.7	9	120	3430	85
1120	400-1120	GF2			2973	115	96.4	96.2	0.89	0.86	3600	2.5	1.1	6.2	10	120	3570	85
1250	450-1400	GF2			2968	131	95.5	95.2	0.88	0.86	4024	2.2	0.6	5.1	14	140	4080	88 ¹⁾
1400	450-1400	GF2			2968	144	95.8	95.5	0.89	0.87	4507	2.2	0.7	5.2	16	150	4300	88 ¹⁾
1600	450-1400	GF2			2970	164	96.1	95.8	0.89	0.86	5147	2.4	0.8	5.9	17	160	4520	88 ¹⁾
1800	450-1400	GF2			2970	184	96.3	96.0	0.89	0.87	5791	2.5	0.8	6.0	19	150	4740	88 ¹⁾
2000	500-1600	GF3			2983	210	96.1	95.8	0.87	0.86	6406	2.0	0.7	5.2	29	200	5840	88 ¹⁾
2250	500-1600	GF3			2983	230	96.3	96.1	0.89	0.88	7207	2.0	0.7	5.3	35	210	6250	88 ¹⁾
2500	500-1600	GF3			2984	255	96.6	96.3	0.89	0.87	8005	2.1	0.8	5.7	37	210	6450	88 ¹⁾
2800	500-1600	GF3			2985	288	96.8	96.4	0.88	0.86	8963	2.3	0.9	6.3	40	230	6720	88 ¹⁾
3150	560-1800	GF3			2983	321	96.6	96.4	0.89	0.88	10090	2.2	0.7	6.1	64	210	8540	88 ¹⁾
3550	560-1800	GF3			2981	358	96.6	96.5	0.90	0.89	11379	2.0	0.6	5.4	64	180	8540	88 ¹⁾
4000	560-1800	GF3			2981	403	96.7	96.7	0.90	0.90	12821	1.9	0.6	5.4	73	200	9060	88 ¹⁾
4500	560-1800	GF3			2981	452	96.9	96.8	0.90	0.89	14424	2.0	0.7	5.7	77	190	9320	88 ¹⁾
5000	560-1800	GF3			2982	495	97.1	97.0	0.91	0.90	16021	2.1	0.7	6.0	86	210	9800	88 ¹⁾
5600	630-2000	GF3			2981	564	96.6	96.3	0.90	0.89	17950	2.1	0.7	5.6	150	320	12310	88 ¹⁾
6000	630-2000	GF3			2983	603	96.8	96.4	0.90	0.89	19219	2.4	0.8	6.5	160	340	12970	88 ¹⁾
6300	630-2000	GF3			2982	632	96.9	96.5	0.90	0.89	20186	2.3	0.8	6.2	160	330	12970	88 ¹⁾
4-pole																		
800	400-1120	GF1	118-40M	GFT1	1485	85	96.0	96.0	0.86	0.84	5147	1.8	1.0	5.1	17	430	3090	85
900	400-1120	GF1	118-40M	GFT1	1487	96	96.2	96.0	0.86	0.83	5783	2.1	1.2	5.9	19	380	3210	85
1000	400-1120	GF1	118-40M	GFT1	1487	106	96.3	96.2	0.86	0.84	6426	2.0	1.1	5.9	21	420	3340	85
1120	400-1250	GF1	118-40L	GFT1	1488	117	96.6	96.5	0.87	0.84	7192	2.2	1.2	6.3	24	450	3670	85
1250	400-1250	GF1	118-40L	GFT1	1488	130	96.8	96.7	0.87	0.84	8027	2.2	1.3	6.3	26	470	3920	85
1400	450-1250	GF1	132-45M	GFT1	1486	141	96.7	96.5	0.90	0.88	9002	2.4	1.0	6.6	41	670	4630	86
1600	450-1250	GF1	132-45M	GFT1	1486	161	96.9	96.8	0.90	0.88	10288	2.5	1.0	6.6	44	700	4780	86
1800	450-1400	GF1	132-45L	GFT1	1486	179	97.1	97.0	0.91	0.89	11574	2.4	1.0	6.7	51	790	5190	86
2000	450-1400	GF1	132-45L	GFT1	1487	203	97.3	97.1	0.89	0.87	12851	2.7	1.2	7.2	54	810	5360	86
2250	500-1600	GF1			1489	231	97.0	96.9	0.88	0.86	14438	2.5	0.9	6.2	80	1070	6220	86
2500	500-1600	GF1			1487	251	97.1	97.1	0.90	0.88	16064	2.2	0.8	5.5	85	1060	6410	86
2800	500-1800	GF1			1488	281	97.1	97.1	0.90	0.88	17980	2.4	0.9	6.0	96	1130	6940	86
3150	500-1800	GF1			1488	315	97.3	97.3	0.90	0.88	20227	2.4	0.9	6.0	110	1210	7320	86
3550	560-1800	GF3			1491	352	97.2	97.0	0.91	0.90	22750	2.2	0.7	5.6	170	1840	9230	86
4000	560-1800	GF3			1491	400	97.3	97.1	0.90	0.89	25634	2.3	0.7	5.8	180	1960	9470	86
4500	560-2000	GF3			1492	445	97.4	97.3	0.91	0.89	28819	2.3	0.8	5.9	190	2010	10150	86
5000	560-2000	GF3			1492	498	97.6	97.4	0.90	0.88	32021	2.5	0.9	6.4	210	2120	10640	86
5600	630-2000	GF3			1490	554	97.3	97.1	0.91	0.91	35911	2.0	0.6	5.5	310	2050	12280	88
6000	630-2240	GF3			1491	592	97.5	97.2	0.91	0.90	38450	2.3	0.7	6.1	340	2210	13210	88
6300	630-2240	GF3			1491	622	97.5	97.3	0.91	0.90	40373	2.1	0.7	5.9	340	2160	13210	88
6500	630-2240	GF3			1491	641	97.6	97.4	0.91	0.91	41655	2.2	0.7	6.1	370	2360	13850	88
7100	630-2240	GF3			1491	699	97.7	97.5	0.91	0.90	45500	2.3	0.7	6.2	390	2380	14160	88

1) Sound pressure level with silencer. Please note frame size may be changed according to specification.



■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor	External max.		
6.6kV, 50Hz																		
6-pole																		
560	400-1120	GF1	118-40M	GFT1	992	63	95.0	94.9	0.83	0.79	5394	2.4	1.1	5.6	24	900	3300	83
630	400-1120	GF1	118-40M	GFT1	993	71	95.2	95.1	0.82	0.78	6062	2.4	1.1	5.8	26	930	3410	83
710	400-1120	GF1	118-40M	GFT1	991	78	94.8	94.9	0.85	0.82	6846	2.2	1.0	5.3	28	980	3530	83
800	400-1250	GF1	118-40L	GFT1	992	87	95.3	95.3	0.85	0.81	7706	2.3	1.1	5.6	32	1100	3840	83
900	400-1250	GF1	118-40L	GFT1	992	97	95.5	95.5	0.85	0.81	8669	2.3	1.1	5.5	34	1120	3960	83
1000	450-1250	GF1	132-45M	GFT1	992	107	95.8	95.7	0.86	0.82	9632	2.2	1.0	6.0	55	1490	4740	83
1120	450-1250	GF1	132-45M	GFT1	991	119	95.9	95.8	0.86	0.83	10799	2.1	0.9	5.8	59	1520	4890	83
1250	450-1400	GF1	132-45L	GFT1	991	130	96.0	96.0	0.88	0.85	12052	2.0	0.9	5.5	67	1640	5280	83
1400	450-1400	GF1	132-45L	GFT1	991	145	96.2	96.1	0.88	0.85	13498	2.1	0.9	5.6	71	1750	5430	83
1600	500-1600	GF1	150-50M	GFT1	991	170	96.2	96.1	0.86	0.84	15427	2.0	1.0	5.6	100	1940	6610	84
1800	500-1600	GF1	150-50M	GFT1	991	188	96.3	96.2	0.87	0.85	17355	2.0	1.0	5.5	120	2120	6970	84
2000	500-1600	GF1	150-50M	GFT1	991	209	96.4	96.4	0.87	0.84	19283	2.0	1.0	5.6	120	2200	7150	84
2250	500-1800	GF1	150-50L	GFT1	991	238	96.4	96.4	0.86	0.83	21694	2.1	1.1	6.0	140	2350	7660	84
2500	500-1800	GF1	150-50L	GFT1	991	261	96.6	96.5	0.87	0.84	24104	2.1	1.1	5.8	150	2490	8020	84
2800	560-1800	GF3			994	279	96.7	96.6	0.91	0.89	26915	2.1	0.7	5.6	210	2850	9150	85
3150	560-1800	GF3			994	313	96.8	96.7	0.91	0.89	30280	2.1	0.7	5.6	230	3060	9610	85
3550	560-2000	GF3			994	353	96.9	96.8	0.91	0.89	34125	2.1	0.8	5.7	250	3240	10250	85
4000	560-2000	GF3			994	397	97.0	96.9	0.91	0.88	38450	2.2	0.8	5.9	270	3440	10710	85
4500	630-2000	GF3			989	453	96.6	96.4	0.90	0.88	43475	2.0	0.7	5.8	390	3030	12390	87
5000	630-2240	GF3			990	509	96.7	96.6	0.89	0.87	48257	2.1	0.7	5.9	410	3050	12990	87
5600	630-2240	GF3			990	562	96.9	96.7	0.90	0.88	54048	2.1	0.8	6.2	480	3360	14190	87
6000	630-2240	GF3			990	608	97.0	96.8	0.89	0.86	57909	2.2	0.8	6.2	480	3420	14190	87
8-pole																		
500	400-1120	GF1	118-40M	GFT1	742	60	94.5	94.3	0.78	0.73	6439	2.4	0.9	5.6	35	1900	3590	80
560	400-1250	GF1	118-40L	GFT1	742	68	94.8	94.5	0.77	0.71	7211	2.5	0.9	5.8	37	1980	3790	80
630	400-1250	GF1	118-40L	GFT1	742	75	95.0	94.7	0.78	0.71	8113	2.6	0.9	5.9	42	2160	4010	80
710	450-1250	GF1	132-45M	GFT1	744	83	95.5	95.2	0.79	0.73	9118	2.1	0.9	5.9	58	2170	4520	81
800	450-1250	GF1	132-45M	GFT1	744	92	95.7	95.4	0.80	0.75	10274	2.1	0.9	5.9	66	2470	4810	81
900	450-1250	GF1	132-45M	GFT1	744	107	95.6	95.3	0.77	0.70	11558	2.3	1.0	6.2	71	2590	4950	81
1000	450-1400	GF1	132-45L	GFT1	744	118	95.8	95.5	0.78	0.72	12843	2.3	1.0	6.2	80	2830	5340	81
1120	450-1400	GF1	132-45L	GFT1	744	130	95.9	95.6	0.79	0.73	14384	2.2	1.0	6.0	84	2870	5490	81
1250	500-1600	GF1	150-50M	GFT1	745	143	95.8	95.5	0.80	0.76	16032	2.0	1.1	5.7	130	3450	6770	85
1400	500-1600	GF1	150-50M	GFT1	745	164	96.0	95.6	0.78	0.73	17956	2.1	1.2	6.1	140	3850	7130	85
1600	500-1800	GF1	150-50L	GFT1	745	185	96.1	95.8	0.79	0.74	20521	2.0	1.1	5.9	150	4060	7630	85
1800	500-1800	GF1	150-50L	GFT1	745	208	96.2	95.9	0.79	0.74	23086	2.1	1.2	6.0	170	4290	7990	85
2000	560-1800	GF1	170-56M	GFT1	745	213	95.6	95.4	0.86	0.83	25651	2.2	1.0	5.6	240	6710	9250	85
2250	560-1800	GF1	170-56M	GFT1	745	245	95.7	95.5	0.84	0.81	28857	2.4	1.1	6.1	270	7490	9690	85
2500	560-2000	GF1	170-56L	GFT1	745	269	95.9	95.7	0.85	0.82	32064	2.3	1.1	6.0	290	7810	10320	85
2800	560-2000	GF1	170-56L	GFT1	745	297	96.0	95.8	0.86	0.82	35911	2.3	1.1	6.0	320	8350	10750	85
3150	630-2000	GF3	190-63M	GFT1	740	334	96.2	95.8	0.86	0.83	40673	2.3	0.8	6.1	450	6320	11900	85
3550	630-2240	GF3	190-63L	GFT1	740	371	96.4	96.0	0.87	0.84	45838	2.4	0.8	6.3	540	7240	13360	85
4000	630-2240	GF3	190-63L	GFT1	740	422	96.5	96.1	0.86	0.83	51648	2.4	0.8	6.3	560	7210	13650	85

Technical Data

IC611 (TEAAC – Totally Enclosed Air-to-Air-Cooled)

Air-cooled motors

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current A	Efficiency		Power factor		Torque Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm^2	External max. kgm^2		
6.6kV, 50Hz																		
10-pole																		
400	400-1120	GF1	118-40M	GFT1	591	49	93.2	93.4	0.77	0.72	6467	1.8	0.8	4.2	34	2300	3430	75
450	400-1250	GF1	118-40L	GFT1	592	55	93.6	93.7	0.77	0.71	7263	1.8	0.8	4.3	36	2430	3630	75
500	400-1250	GF1	118-40L	GFT1	592	61	93.9	93.9	0.77	0.71	8070	1.9	0.8	4.4	41	2670	3850	75
560	450-1250	GF1	132-45M	GFT1	594	70	94.5	94.3	0.75	0.69	9008	2.2	0.9	4.9	52	3180	4210	77
630	450-1250	GF1	132-45M	GFT1	594	76	94.7	94.6	0.77	0.71	10134	2.1	0.9	4.8	60	3630	4500	77
710	450-1250	GF1	132-45M	GFT1	594	87	94.8	94.6	0.76	0.70	11421	2.2	0.9	5.0	69	4020	4790	77
800	450-1400	GF1	132-45L	GFT1	594	96	94.8	94.7	0.77	0.71	12869	2.1	0.9	4.9	73	4130	5040	77
900	450-1400	GF1	132-45L	GFT1	594	108	95.1	94.9	0.77	0.71	14477	2.2	0.9	5.0	82	4530	5330	77
1000	500-1600	GF1	150-50M	GFT1	594	121	95.3	95.0	0.76	0.70	16086	2.3	0.9	5.5	110	4690	6370	80
1120	500-1600	GF1	150-50M	GFT1	594	136	95.4	95.2	0.76	0.70	18016	2.3	0.9	5.5	120	4970	6550	80
1250	500-1600	GF1	150-50M	GFT1	594	149	95.6	95.4	0.77	0.71	20107	2.3	0.9	5.5	140	5420	6900	80
1400	500-1800	GF1	150-50L	GFT1	594	167	95.6	95.5	0.77	0.71	22520	2.3	0.9	5.5	150	5690	7400	80
1600	500-1800	GF1	150-50L	GFT1	594	190	95.7	95.5	0.77	0.70	25737	2.3	0.9	5.5	160	6010	7760	80
1800	560-2000	GF1	170-56L	GFT1	596	210	96.2	95.9	0.78	0.72	28857	2.5	1.1	6.3	290	7860	10140	80
2000	560-2000	GF1	170-56L	GFT1	596	233	96.4	96.0	0.78	0.72	32064	2.5	1.1	6.2	310	8180	10580	80
2250	630-2000	GF3	190-63M	GFT1	595	259	96.4	96.1	0.79	0.74	36132	2.2	0.9	5.8	370	8440	10950	83
2500	630-2000	GF3	190-63M	GFT1	595	288	96.4	96.2	0.79	0.74	40147	2.3	1.0	6.1	440	9560	11810	83
2800	630-2240	GF3	190-63L	GFT1	595	321	96.6	96.3	0.79	0.75	44964	2.2	0.9	6.0	480	10420	12690	83
3150	630-2240	GF3	190-63L	GFT1	595	357	96.7	96.5	0.80	0.75	50585	2.2	0.9	6.0	520	10800	13270	83
12-pole																		
250	400-1120	GF1	118-40M	GFT1	493	34	93.0	92.7	0.71	0.64	4845	2.0	0.7	3.9	29	3400	3210	75
280	400-1120	GF1	118-40M	GFT1	493	38	93.2	93.0	0.70	0.63	5427	2.1	0.7	4.0	31	3640	3320	75
315	400-1120	GF1	118-40M	GFT1	493	42	92.9	92.8	0.71	0.64	6105	2.0	0.7	3.9	34	3610	3430	75
355	400-1250	GF1	118-40L	GFT1	493	48	93.1	93.0	0.70	0.63	6880	2.1	0.7	4.0	38	4110	3740	75
400	400-1250	GF1	118-40L	GFT1	493	53	93.5	93.3	0.71	0.64	7752	2.1	0.7	4.0	41	4380	3850	75
450	450-1250	GF1	132-45M	GFT1	492	57	93.4	93.4	0.74	0.68	8739	1.8	0.7	3.6	56	4590	4370	75
500	450-1250	GF1	132-45M	GFT1	493	64	93.7	93.6	0.73	0.67	9691	1.9	0.7	3.8	65	5290	4660	75
560	450-1250	GF1	132-45M	GFT1	493	72	93.9	93.9	0.73	0.67	10853	1.9	0.7	3.9	69	5580	4810	75
630	450-1400	GF1	132-45L	GFT1	493	82	94.1	94.0	0.72	0.66	12210	2.0	0.8	4.0	73	5790	5050	75
710	450-1400	GF1	132-45L	GFT1	493	91	94.4	94.3	0.73	0.67	13761	2.0	0.8	4.0	82	6310	5350	75
800	500-1600	GF1	150-50M	GFT1	495	101	94.5	94.3	0.74	0.68	15442	2.1	0.7	4.3	120	7400	6540	76
900	500-1600	GF1	150-50M	GFT1	495	114	94.8	94.5	0.73	0.66	17373	2.2	0.8	4.6	140	8110	6890	76
1000	500-1800	GF1	150-50L	GFT1	495	125	94.8	94.6	0.74	0.67	19303	2.2	0.8	4.5	160	9140	7570	76
1120	500-1800	GF1	150-50L	GFT1	495	140	94.9	94.7	0.74	0.67	21619	2.2	0.8	4.5	160	9360	7740	76
1250	560-1800	GF1	170-56M	GFT1	495	152	94.8	94.5	0.76	0.71	24129	2.2	0.7	4.8	250	10280	9240	76
1400	560-1800	GF1	170-56M	GFT1	495	168	94.9	94.7	0.77	0.71	27024	2.2	0.7	4.7	260	10350	9450	76
1600	560-2000	GF1	170-56L	GFT1	495	191	95.3	95.0	0.77	0.71	30885	2.3	0.7	4.9	310	12140	10520	76
1800	630-2000	GF3	190-63M	GFT1	495	222	95.9	95.7	0.74	0.68	34745	2.1	0.7	5.2	400	11570	11180	79
2000	630-2000	GF3	190-63M	GFT1	495	243	96.0	95.8	0.75	0.69	38606	2.0	0.7	5.1	440	12470	11760	79
2250	630-2240	GF3	190-63L	GFT1	495	274	96.1	96.0	0.75	0.70	43432	2.0	0.7	5.1	480	13460	12640	79
2500	630-2240	GF3	190-63L	GFT1	495	303	96.3	96.1	0.75	0.69	48257	2.1	0.7	5.2	520	14240	13220	79

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm^2	External max. kgm^2		
11kV, 50Hz																		
2-pole																		
1000	450-1400	GF2			2972	67	94.4	93.9	0.83	0.79	3215	2.5	0.6	5.4	13	150	3760	88 ¹⁾
1120	450-1400	GF2			2972	73	94.9	94.5	0.85	0.82	3601	2.5	0.7	5.6	14	150	3980	88 ¹⁾
1250	450-1400	GF2			2973	84	95.2	94.7	0.83	0.79	4017	2.6	0.7	5.8	14	150	3980	88 ¹⁾
1400	500-1600	GF3			2987	95	95.9	95.5	0.81	0.76	4478	2.5	0.7	5.8	24	210	5350	88 ¹⁾
1600	500-1600	GF3			2985	106	96.0	95.7	0.83	0.79	5122	2.2	0.6	5.2	24	200	5350	88 ¹⁾
1800	500-1600	GF3			2986	117	96.2	96.0	0.84	0.80	5760	2.2	0.7	5.5	27	210	5550	88 ¹⁾
2000	500-1600	GF3			2986	130	96.5	96.3	0.84	0.80	6400	2.4	0.8	5.9	29	210	5750	88 ¹⁾
2250	500-1600	GF3			2987	148	96.7	96.4	0.83	0.79	7197	2.6	0.9	6.4	32	210	5950	88 ¹⁾
2500	560-1800	GF3			2984	154	96.1	95.8	0.89	0.87	8005	2.3	0.6	6.0	59	210	8150	88 ¹⁾
2800	560-1800	GF3			2984	172	96.3	96.0	0.89	0.88	8966	2.3	0.6	6.1	64	210	8410	88 ¹⁾
3150	560-1800	GF3			2982	191	96.4	96.2	0.90	0.89	10093	2.0	0.6	5.5	68	210	8660	88 ¹⁾
3550	560-1800	GF3			2983	215	96.6	96.4	0.90	0.89	11371	2.1	0.6	5.8	73	220	8920	88 ¹⁾
4000	560-1800	GF3			2982	239	96.6	96.5	0.91	0.90	12817	1.9	0.6	5.4	82	210	9430	88 ¹⁾
4500	630-2000	GF3			2981	274	96.1	95.5	0.90	0.89	14424	2.1	0.7	5.6	150	350	12310	88 ¹⁾
5000	630-2000	GF3			2981	303	96.3	95.8	0.90	0.89	16026	2.0	0.6	5.3	150	320	12310	88 ¹⁾
4-pole																		
710	450-1250	GF1	132-45M	GFT1	1488	47	94.4	93.9	0.84	0.79	4559	2.5	0.8	6.2	25	550	3800	86
800	450-1250	GF1	132-45M	GFT1	1487	52	94.8	94.4	0.86	0.83	5141	2.4	0.8	6.1	28	580	3950	86
900	450-1400	GF1	132-45L	GFT1	1488	60	95.3	94.9	0.84	0.79	5779	2.8	1.0	6.9	32	610	4100	86
1000	450-1400	GF1	132-45L	GFT1	1488	65	95.6	95.3	0.85	0.80	6421	2.8	1.0	7.1	35	640	4250	86
1120	450-1400	GF1	132-45L	GFT1	1489	73	96.0	95.6	0.85	0.80	7187	2.9	1.1	7.4	38	690	4410	86
1250	500-1600	GF1			1488	81	95.8	95.8	0.85	0.82	8027	2.2	0.7	5.1	48	840	4980	86
1400	500-1600	GF1			1488	89	96.1	96.0	0.86	0.83	8990	2.2	0.7	5.2	53	880	5170	86
1600	500-1600	GF1			1488	101	96.2	96.2	0.87	0.84	10274	2.2	0.7	5.2	59	910	5360	86
1800	500-1800	GF1			1488	111	96.4	96.5	0.89	0.87	11558	2.2	0.7	5.4	69	1000	5730	86
2000	500-1800	GF1			1489	124	96.6	96.6	0.88	0.85	12834	2.6	0.9	6.3	80	1100	6100	86
2250	500-1800	GF1			1489	139	96.7	96.7	0.88	0.85	14438	2.6	0.9	6.3	85	1090	6280	86
2500	560-1800	GF3			1492	154	97.1	96.9	0.88	0.86	16010	2.4	0.7	5.9	130	1730	8130	86
2800	560-1800	GF3			1492	172	97.2	97.0	0.88	0.85	17932	2.5	0.7	6.1	140	1830	8370	86
3150	560-2000	GF3			1492	191	97.3	97.1	0.89	0.86	20173	2.5	0.8	6.2	160	1930	8840	86
3550	560-2000	GF3			1492	215	97.4	97.3	0.89	0.87	22735	2.5	0.8	6.3	180	2020	9310	86
4000	630-2000	GF3			1492	243	97.1	96.8	0.89	0.87	25616	2.4	0.7	6.3	260	2160	11580	88
4500	630-2240	GF3			1491	270	97.2	97.0	0.90	0.89	28838	2.2	0.6	5.8	280	2130	11580	88
5000	630-2240	GF3			1491	297	97.3	97.1	0.91	0.90	32042	2.2	0.7	5.9	320	2320	12780	88
5600	630-2240	GF3			1491	335	97.5	97.3	0.90	0.90	35887	2.2	0.7	6.0	340	2340	13210	88

1) Sound pressure level with silencer. Please note frame size may be changed according to specification.



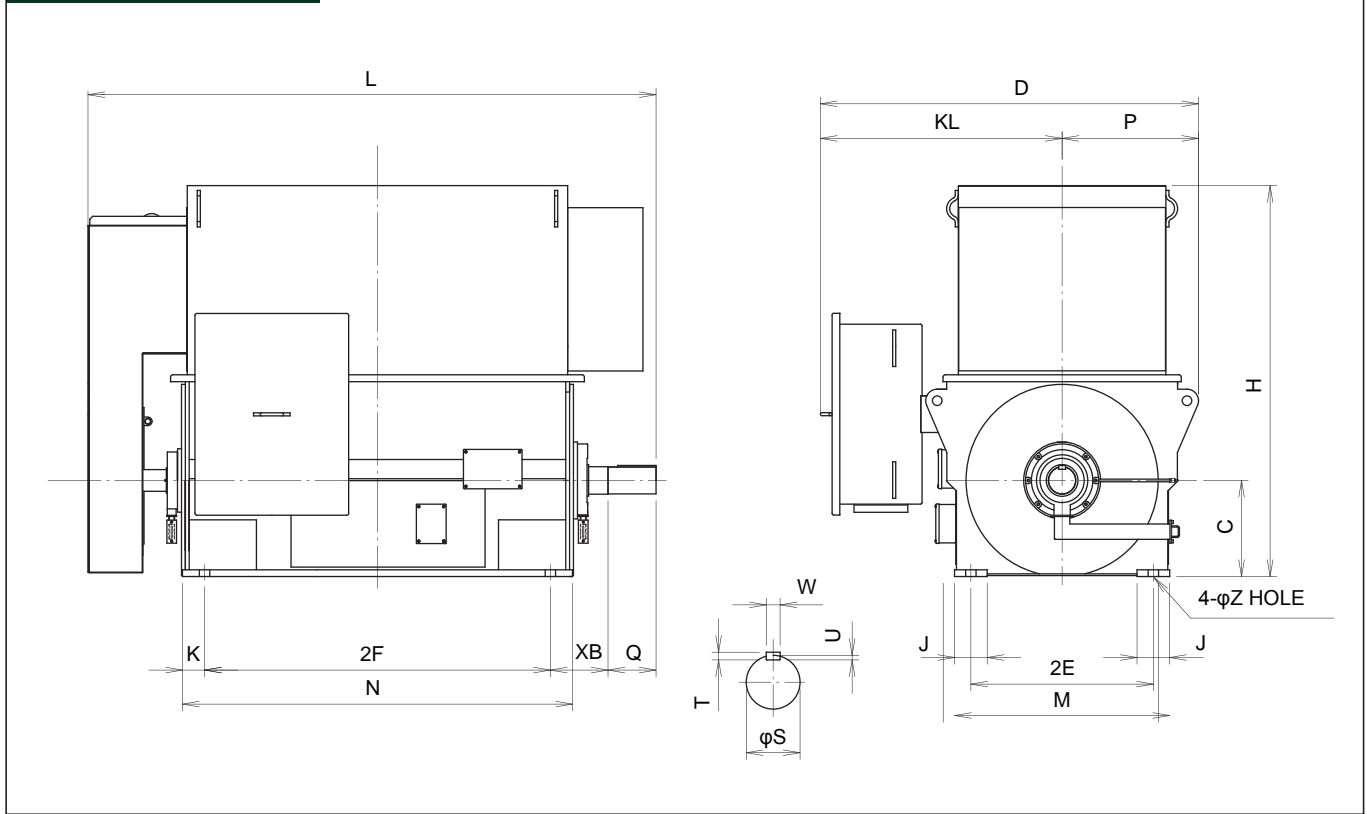
■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm ²	External max. kgm ²		
11kV, 50Hz																		
10-pole																		
450	450-1400	GF1	132-45L	GFT1	596	38	93.1	92.4	0.67	0.58	7214	3.1	1.3	6.0	60	3770	4430	77
500	450-1400	GF1	132-45L	GFT1	595	41	93.3	92.7	0.69	0.61	8029	2.8	1.1	5.7	60	3740	4430	77
560	450-1400	GF1	132-45L	GFT1	595	45	93.5	93.0	0.70	0.62	8993	2.7	1.1	5.7	65	3780	4570	77
630	500-1600	GF1	150-50M	GFT1	595	49	94.2	93.7	0.73	0.66	10117	2.6	1.0	5.9	93	4120	6060	80
710	500-1600	GF1	150-50M	GFT1	594	52	94.3	94.0	0.76	0.69	11421	2.3	0.9	5.4	93	4040	6060	80
800	500-1600	GF1	150-50M	GFT1	594	60	94.6	94.3	0.75	0.68	12869	2.5	1.0	5.8	110	4550	6180	80
900	500-1600	GF1	150-50M	GFT1	594	68	94.8	94.5	0.74	0.67	14477	2.5	1.0	5.8	110	4730	6350	80
1000	500-1600	GF1	150-50M	GFT1	594	74	95.1	94.8	0.75	0.69	16086	2.4	0.9	5.8	130	5120	6700	80
1120	500-1800	GF1	150-50L	GFT1	594	82	95.2	94.9	0.76	0.69	18016	2.5	0.9	5.8	140	5760	7200	80
1250	500-1800	GF1	150-50L	GFT1	595	92	95.4	95.1	0.75	0.68	20073	2.6	1.0	6.0	160	6160	7550	80
1400	560-1800	GF1	170-56M	GFT1	596	100	95.5	95.1	0.77	0.70	22444	2.6	1.1	6.3	250	6930	9180	80
1600	560-2000	GF1	170-56L	GFT1	596	113	95.6	95.3	0.78	0.73	25651	2.4	1.0	6.0	270	7490	9770	80
1800	560-2000	GF1	170-56L	GFT1	596	130	95.7	95.4	0.76	0.70	28857	2.6	1.1	6.5	300	7970	10170	80
2000	630-2000	GF3	190-63M	GFT1	595	141	96.0	95.7	0.78	0.73	32117	2.3	1.0	6.0	370	8480	10950	83
2250	630-2000	GF3	190-63M	GFT1	595	156	96.1	95.9	0.79	0.74	36132	2.2	0.9	5.9	400	8960	11120	83
2500	630-2240	GF3	190-63L	GFT1	595	171	96.3	96.1	0.80	0.76	40147	2.1	0.9	5.8	460	9710	12280	83
2800	630-2240	GF3	190-63L	GFT1	595	196	96.5	96.2	0.78	0.73	44964	2.4	1.0	6.3	500	10810	12840	83
12-pole																		
355	450-1400	GF1	132-45L	GFT1	493	29	92.2	91.9	0.70	0.64	6880	2.1	0.8	4.0	56	4690	4310	75
400	450-1400	GF1	132-45L	GFT1	493	33	92.3	92.1	0.71	0.64	7752	2.1	0.8	4.0	60	4960	4450	75
450	450-1400	GF1	132-45L	GFT1	493	36	92.7	92.6	0.71	0.64	8722	2.1	0.8	4.0	65	5240	4590	75
500	500-1600	GF1	150-50M	GFT1	495	40	92.5	92.2	0.72	0.66	9651	2.2	0.8	4.4	93	5960	5790	76
560	500-1600	GF1	150-50M	GFT1	495	43	93.0	92.8	0.75	0.69	10810	2.0	0.7	4.1	110	6490	6140	76
630	500-1600	GF1	150-50M	GFT1	494	48	93.1	93.0	0.75	0.70	12185	1.9	0.7	4.0	110	6820	6310	76
710	500-1600	GF1	150-50M	GFT1	495	55	93.7	93.4	0.73	0.67	13705	2.2	0.7	4.4	130	7630	6660	76
800	500-1800	GF1	150-50L	GFT1	495	61	94.0	93.8	0.74	0.68	15442	2.1	0.7	4.4	140	8360	7150	76
900	500-1800	GF1	150-50L	GFT1	495	68	94.2	94.0	0.74	0.68	17373	2.1	0.7	4.4	160	9190	7500	76
1000	560-1800	GF1	170-56M	GFT1	494	72	94.2	94.0	0.78	0.73	19342	2.0	0.6	4.4	240	9840	8960	76
1120	560-2000	GF1	170-56L	GFT1	495	80	94.5	94.3	0.78	0.73	21619	2.1	0.6	4.5	260	10710	9390	76
1250	560-2000	GF1	170-56L	GFT1	495	89	94.6	94.4	0.78	0.73	24129	2.1	0.6	4.5	300	11800	10220	76
1400	630-2000	GF3	190-63M	GFT1	495	102	95.3	95.2	0.76	0.70	27024	1.9	0.6	4.8	350	10660	10880	79
1600	630-2000	GF3	190-63M	GFT1	495	116	95.5	95.4	0.76	0.70	30885	1.9	0.6	4.8	400	11750	11180	79
1800	630-2240	GF3	190-63L	GFT1	495	131	95.6	95.4	0.76	0.70	34745	2.0	0.7	5.0	460	13200	12170	79
2000	630-2240	GF3	190-63L	GFT1	495	145	95.7	95.6	0.76	0.70	38606	2.0	0.6	5.0	500	13820	12740	79

■ Dimension drawings

Antifriction bearings

Drawing No.: GF1



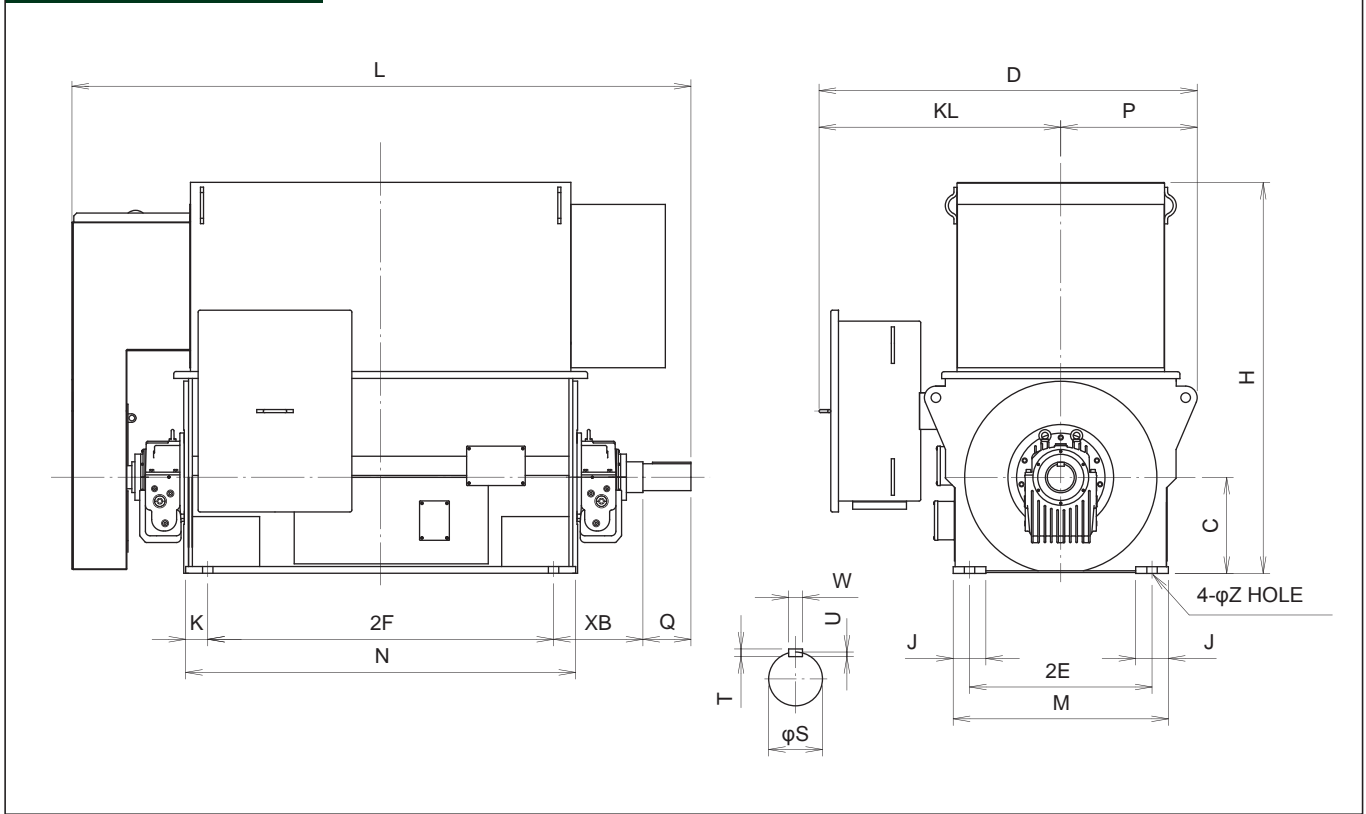
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Frame	Dimensions															Shaft end		Key size		
	C	D	2E	2F	H	J	K	L	M	N	P	Z	XB	KL	Q	S	T	U	W	
Frame No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	
4-pole																				
400-1120	400	1820	800	1120	1590	170	160	2310	920	1440	610	42	310	1210	250	110	16	10	28	
400-1250	400	1820	800	1250	1650	170	160	2440	920	1570	610	42	310	1210	250	110	16	10	28	
450-1250	450	1920	900	1250	1730	170	205	2570	1020	1660	660	54	355	1260	250	120	18	11	32	
450-1400	450	1920	900	1400	1820	170	205	2720	1020	1810	660	54	355	1260	250	120	18	11	32	
500-1600	500	2040	1000	1600	1980	170	125	2870	1120	1850	730	60	280	1310	300	140	20	12	36	
500-1800	500	2040	1000	1800	2050	170	125	3070	1120	2050	730	60	280	1310	300	140	20	12	36	
6-pole																				
400-1120	400	1820	800	1120	1640	170	160	2310	920	1440	610	42	310	1210	250	110	16	10	28	
400-1250	400	1820	800	1250	1730	170	160	2440	920	1570	610	42	310	1210	250	110	16	10	28	
450-1250	450	1920	900	1250	1810	170	205	2570	1020	1660	660	54	355	1260	250	140	20	12	36	
450-1400	450	1920	900	1400	1870	170	205	2720	1020	1810	660	54	355	1260	250	140	20	12	36	
500-1600	500	2040	1000	1600	2040	170	125	2870	1120	1850	730	60	280	1310	300	170	22	13	40	
500-1800	500	2040	1000	1800	2120	170	125	3070	1120	2050	730	60	280	1310	300	170	22	13	40	
8-pole and above																				
400-1120	400	1820	800	1120	1640	170	160	2310	920	1440	610	42	310	1210	250	120	18	11	32	
400-1250	400	1820	800	1250	1730	170	160	2440	920	1570	610	42	310	1210	250	120	18	11	32	
450-1250	450	1920	900	1250	1810	170	205	2570	1020	1660	660	54	355	1260	250	140	20	12	36	
450-1400	450	1920	900	1400	1870	170	205	2720	1020	1810	660	54	355	1260	250	140	20	12	36	
500-1600	500	2040	1000	1600	2040	170	125	2870	1120	1850	730	60	280	1310	300	170	22	13	40	
500-1800	500	2040	1000	1800	2120	170	125	3070	1120	2050	730	60	280	1310	300	170	22	13	40	
560-1800	560	2160	1120	1800	2240	215	160	3190	1240	2120	790	68	320	1370	350	190	25	15	45	
560-2000	560	2160	1120	2000	2350	215	160	3390	1240	2320	790	68	320	1370	350	190	25	15	45	

■ Dimension drawings

Self-cooled sleeve bearings

Drawing No.: GF2

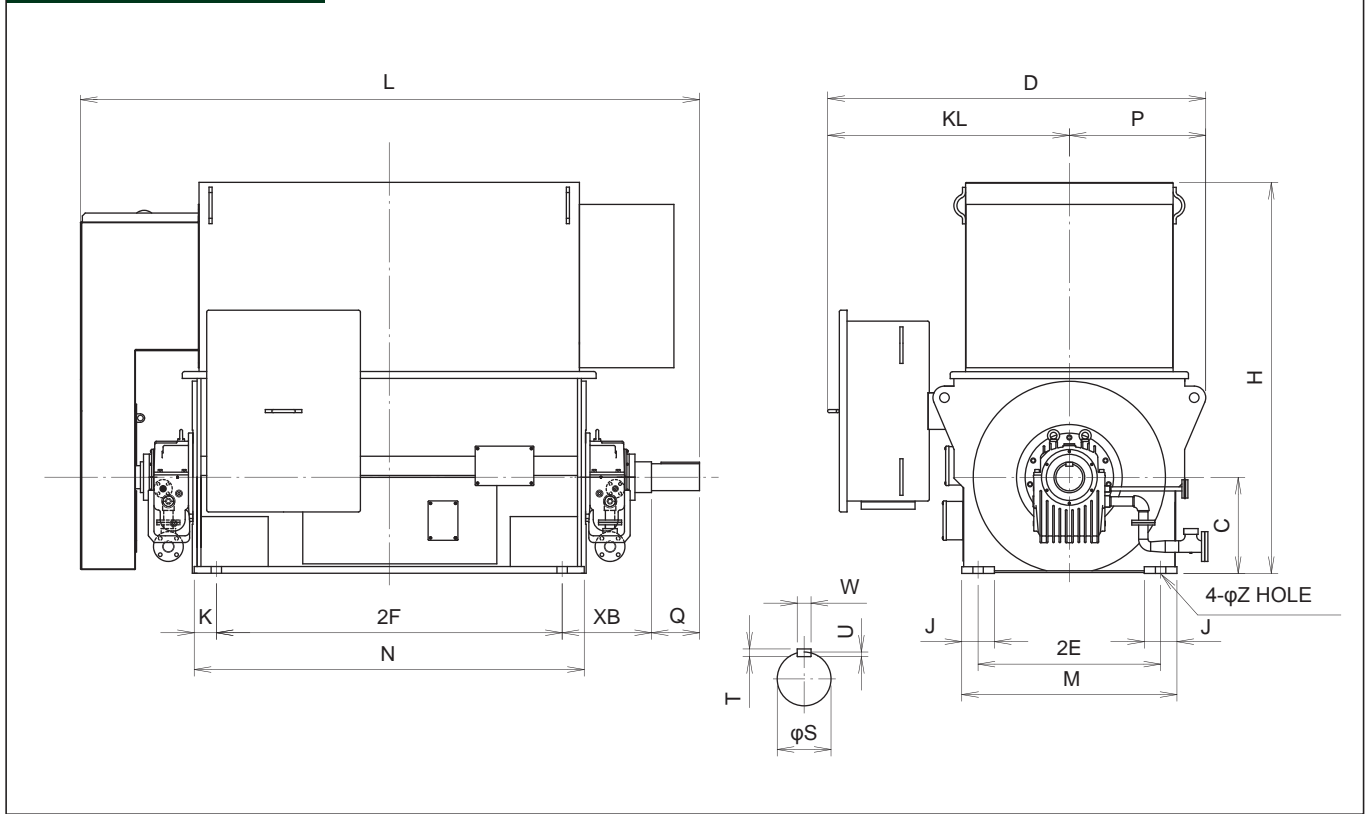


Frame	Dimensions														Shaft end		Key size			
	C	D	2E	2F	H	J	K	L	M	N	P	Z	XB	KL	Q	S	T	U	W	
Frame No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
2-pole																				
400-1120	400	1820	800	1120	1660	170	290	2730	920	1570	610	42	420	1210	170	85	14	9	22	
450-1400	450	1920	900	1400	1820	170	205	3090	1020	1810	660	54	465	1260	210	90	14	9	25	

■ Dimension drawings

Forced feed oil lubricated sleeve bearings

Drawing No.: GF3



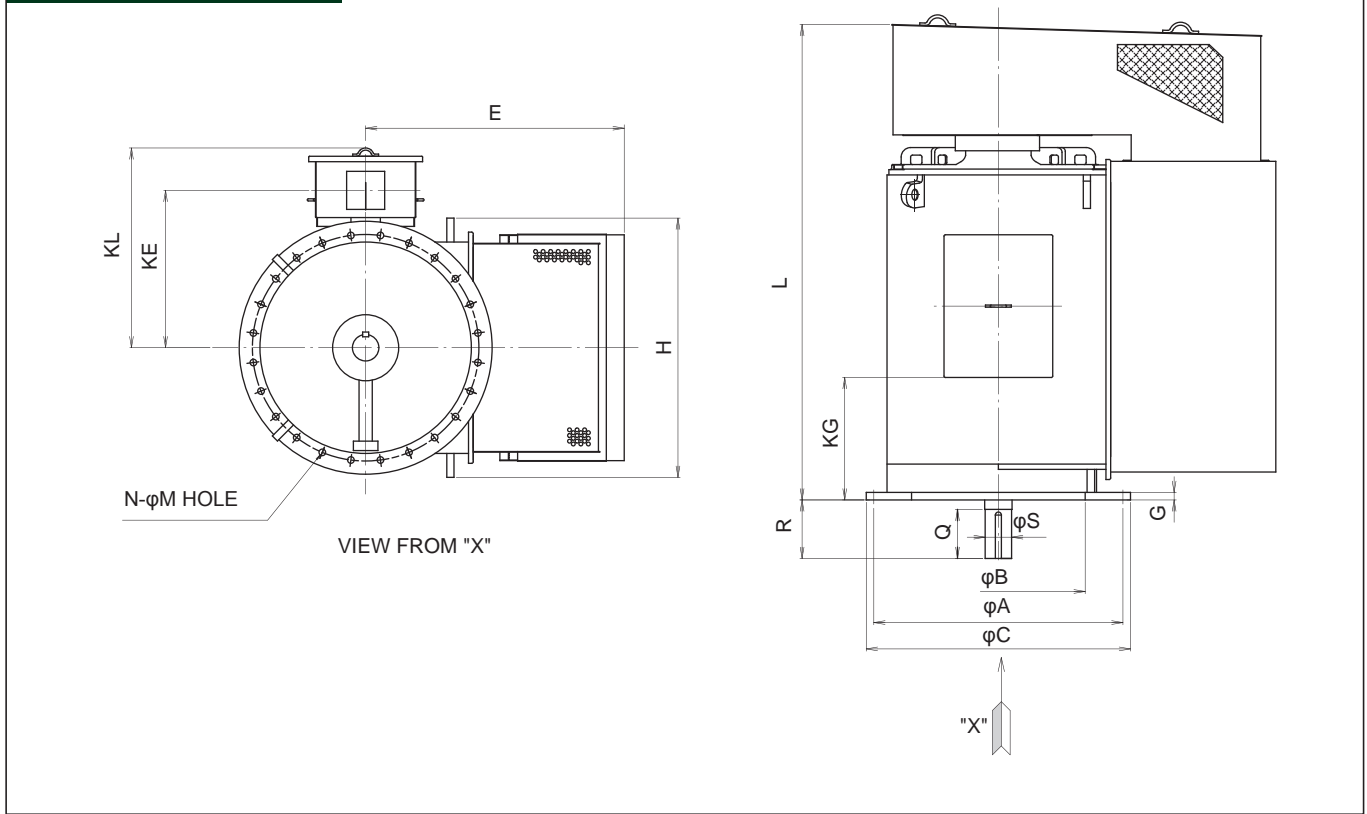
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Frame	Dimensions																Shaft end		Key size	
	C	D	2E	2F	H	J	K	L	M	N	P	Z	XB	KL	Q	S	T	U	W	
Frame No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	
2-pole																				
500-1600	500	2040	1000	1600	2050	170	325	3450	1120	2050	730	60	400	1310	250	105	16	10	28	
560-1800	560	2160	1120	1800	2170	215	360	3720	1240	2320	790	68	435	1370	250	125	18	11	32	
630-2000	630	2310	1260	2000	2310	230	110	3990	1380	2460	860	66	400	1450	250	140	20	12	36	
4-pole																				
560-1800	560	2160	1120	1800	2080	215	160	3750	1240	2120	790	68	565	1370	350	170	22	13	40	
560-2000	560	2160	1120	2000	2170	215	160	3950	1240	2320	790	68	565	1370	350	170	22	13	40	
630-2000	630	2310	1260	2000	2250	230	110	3950	1380	2220	860	66	500	1450	350	210	28	17	50	
630-2240	630	2310	1260	2240	2310	230	110	3990	1380	2460	860	66	500	1450	350	210	28	17	50	
6-pole																				
560-1800	560	2160	1120	1800	2240	215	160	3750	1240	2120	790	68	565	1370	350	190	25	15	45	
560-2000	560	2160	1120	2000	2350	215	160	3950	1240	2320	790	68	565	1370	350	190	25	15	45	
630-2000	630	2310	1260	2000	2500	230	110	4030	1380	2220	860	66	580	1450	350	210	28	17	50	
630-2240	630	2310	1260	2240	2670	230	110	4190	1380	2460	860	66	580	1450	350	210	28	17	50	
8-pole and above																				
630-2000	630	2310	1260	2000	2500	230	110	4030	1380	2220	860	66	580	1450	350	210	28	17	50	
630-2240	630	2310	1260	2240	2670	230	110	4270	1380	2460	860	66	580	1450	350	210	28	17	50	

■ Dimension drawings

Antifriction bearings

Drawing No.: GFT1



Frame	Dimensions												Shaft end		
	A	B	C	E	G	H	KE	KG	L	M	N	KL	Q	R	S
Frame No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4-pole															
118-40M	1180	720	1250	1270	35	1310	970	920	2290	28	8	1280	250	300	110
118-40L	1180	720	1250	1340	35	1310	970	1040	2420	28	8	1280	250	300	110
132-45M	1320	830	1400	1380	35	1410	1020	1070	2510	28	16	1330	250	300	120
132-45L	1320	830	1400	1470	35	1410	1020	1240	2670	28	16	1330	250	300	120
6-pole															
118-40M	1180	720	1250	1330	35	1310	970	820	2290	28	8	1280	250	300	110
118-40L	1180	720	1250	1410	35	1310	970	940	2420	28	8	1280	250	300	110
132-45M	1320	830	1400	1460	35	1410	1020	970	2510	28	16	1330	250	300	140
132-45L	1320	830	1400	1530	35	1410	1020	1130	2670	28	16	1330	250	300	140
150-50M	1500	940	1600	1635	40	1510	1070	1120	2710	28	24	1380	300	350	170
150-50L	1500	940	1600	1725	40	1510	1070	1320	2910	28	24	1380	300	350	170
8-pole and above															
118-40M	1180	720	1250	1330	35	1310	970	820	2290	28	8	1280	250	300	120
118-40L	1180	720	1250	1410	35	1310	970	940	2420	28	8	1280	250	300	120
132-45M	1320	830	1400	1460	35	1410	1020	970	2510	28	16	1330	250	300	140
132-45L	1320	830	1400	1530	35	1410	1020	1130	2670	28	16	1330	250	300	140
150-50M	1500	940	1600	1635	40	1510	1070	1120	2710	28	24	1380	300	350	170
150-50L	1500	940	1600	1725	40	1510	1070	1320	2910	28	24	1380	300	350	170
170-56M	1700	1060	1800	1790	45	1630	1130	1300	2970	28	24	1440	350	400	190
170-56L	1700	1060	1800	1900	45	1630	1130	1500	3170	28	24	1440	350	400	190
190-63M	1900	1200	2000	1970	45	1830	1230	1370	3210	35	24	1540	350	400	210
190-63L	1900	1200	2000	2120	45	1830	1230	1610	3450	35	24	1540	350	400	210

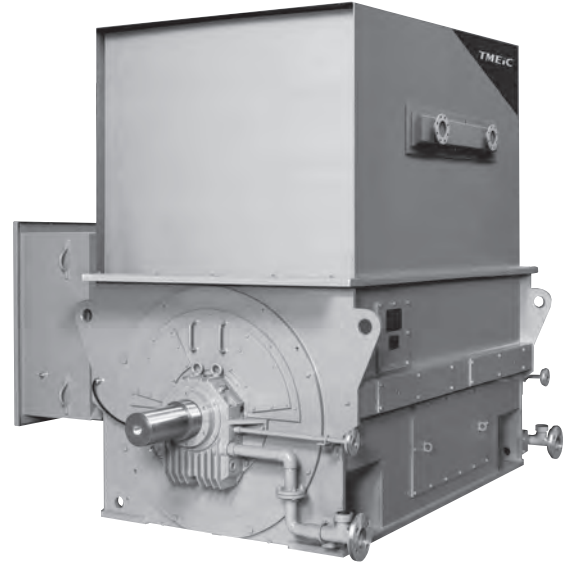
Technical Data

IC81W (TEWAC – Totally Enclosed Water-to-Air-Cooled)

Water-cooled motors

Technical data

IC81W (TEWAC)	
Rated voltage	Up to 11.0kV
Rated frequency	50/60Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3/IM V1
Degree of protection	IP55
Cooling method	IC81W
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height	400 to 630mm
Bearings	Antifriction bearings, sleeve bearings
Cage material	Copper
Frame design for shaft heights 400 to 630mm	Frame: Steel Top cover: Steel
Tube material for water cooler	Deoxidized copper
Standards	IEC, NEMA, JEC



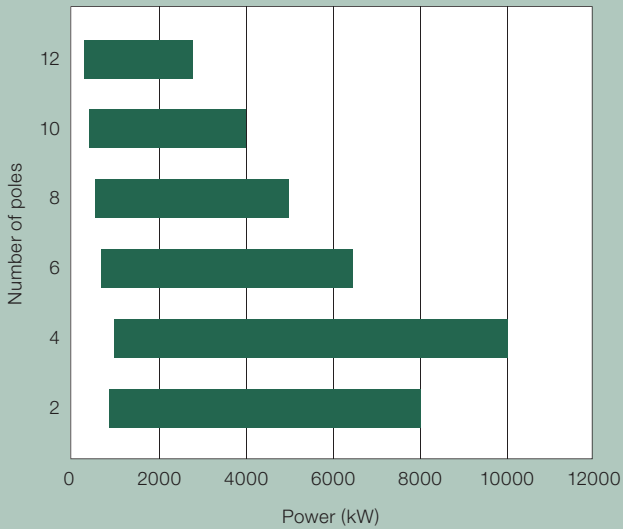
Power range – Shaft height: 400 to 630mm

Insulation system, thermal class: 155 (F), utilized to 130 (B).

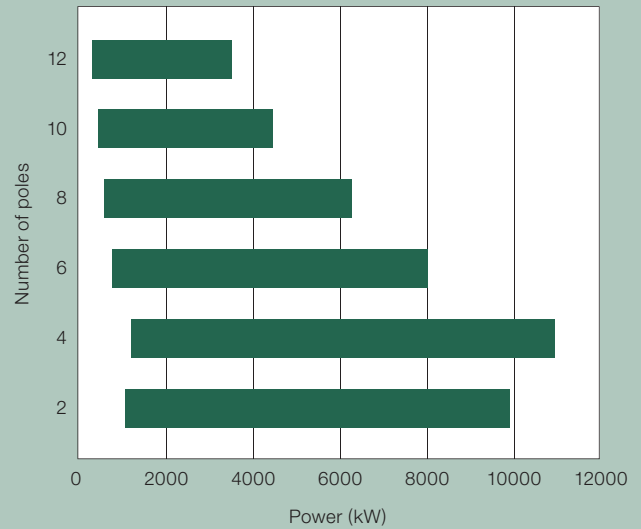
Coolant temperature: up to 25°C

Installation altitude: up to 1000m

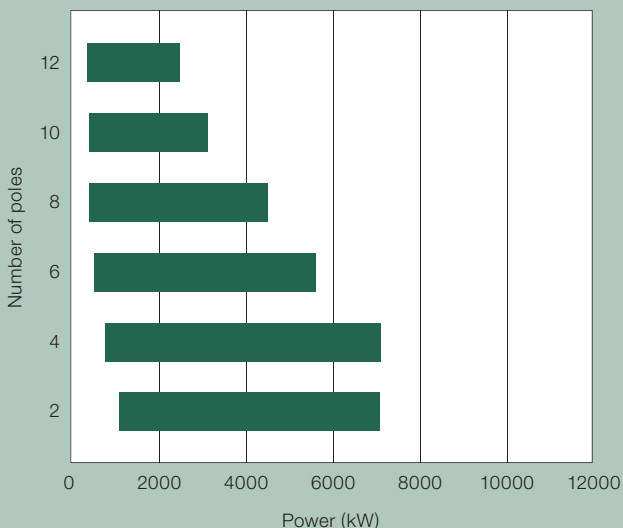
3.3 to 6.6kV, 50Hz



3.3 to 6.6kV, 60Hz



11kV, 50Hz



3

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current A	Efficiency		Power factor		Torque Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm ²	External max. kgm ²		
3.3kV, 50Hz																		
2-pole																		
1000	400-1120	GR2A			2973	210	96.1	96.2	0.87	0.85	3214	2.1	0.8	4.8	7	110	3320	85
1120	400-1120	GR2A			2974	232	96.3	96.4	0.88	0.85	3598	2.2	0.9	5.2	8	110	3450	85
1250	400-1120	GR2A			2973	256	96.2	96.4	0.89	0.87	4017	2.1	0.9	5.1	9	120	3580	85
1400	400-1120	GR2A			2976	289	96.5	96.5	0.88	0.86	4495	2.4	1.1	5.8	10	120	3720	85
1600	400-1120	GR2A			2976	326	96.6	96.7	0.89	0.87	5137	2.3	1.1	5.8	11	120	3850	85
1800	450-1400	GR2A			2970	370	96.8	96.7	0.88	0.86	5791	2.1	0.8	5.0	16	150	4410	85
2000	450-1400	GR2A			2971	406	96.9	96.9	0.89	0.87	6432	2.1	0.8	5.3	17	160	4640	85
2250	450-1400	GR2A			2972	456	97.1	97.0	0.89	0.86	7234	2.3	0.9	5.6	19	150	4860	85
2500	450-1400	GR2A			2973	511	97.3	97.2	0.88	0.85	8035	2.5	1.0	6.1	20	170	5090	85
2800	500-1600	GR3A			2982	582	96.9	96.7	0.87	0.85	8972	2.0	0.7	5.2	32	190	5960	85
3150	500-1600	GR3A			2983	646	97.0	96.8	0.88	0.86	10090	2.1	0.8	5.7	37	210	6370	85
3550	500-1600	GR3A			2981	720	97.0	97.0	0.89	0.88	11379	1.8	0.7	5.0	40	200	6630	85
4000	500-1600	GR3A			2983	819	97.1	97.0	0.88	0.86	12813	2.1	0.8	5.7	42	200	6840	85
4-pole																		
1250	400-1120	GR1A	118-40M	GRT1A	1487	261	96.5	96.6	0.87	0.85	8032	2.0	1.1	5.5	22	420	3700	85
1400	400-1250	GR1A	118-40L	GRT1A	1487	295	96.7	96.7	0.86	0.85	8996	2.0	1.1	5.6	24	440	3810	85
1600	400-1250	GR1A	118-40L	GRT1A	1488	336	96.9	96.9	0.86	0.84	10274	2.1	1.2	5.9	28	460	4190	85
1800	450-1250	GR1A	132-45M	GRT1A	1490	363	96.6	96.7	0.90	0.89	11543	1.9	0.8	5.4	44	640	4930	85
2000	450-1250	GR1A	132-45M	GRT1A	1491	407	96.8	96.8	0.89	0.88	12817	2.1	0.9	5.9	47	680	5090	85
2250	450-1400	GR1A	132-45L	GRT1A	1491	458	96.7	96.8	0.89	0.88	14419	2.0	0.9	5.7	51	680	5300	85
2500	450-1400	GR1A	132-45L	GRT1A	1491	508	96.8	96.9	0.89	0.88	16021	2.0	0.9	5.7	54	700	5470	85
2800	500-1600	GR1A			1487	569	96.9	96.9	0.89	0.89	17992	2.0	0.8	5.3	85	870	6440	85
3150	500-1600	GR1A			1487	639	97.0	97.0	0.89	0.89	20241	1.9	0.8	5.2	91	910	6640	85
3550	500-1800	GR1A			1486	712	97.0	97.1	0.90	0.90	22826	1.8	0.8	5.0	100	980	7110	85
4000	500-1800	GR1A			1487	810	97.1	97.2	0.89	0.89	25703	1.9	0.8	5.1	110	1000	7300	85
4500	560-1800	GR3A			1487	890	97.3	97.3	0.91	0.90	28915	1.9	0.7	5.4	160	1370	8960	85
5000	560-1800	GR3A			1487	987	97.4	97.4	0.91	0.91	32128	1.9	0.7	5.5	180	1460	9450	85
5600	560-2000	GR3A			1487	1105	97.5	97.5	0.91	0.91	35984	2.0	0.8	5.7	190	1510	10050	85
6000	560-2000	GR3A			1487	1172	97.4	97.5	0.92	0.92	38554	1.9	0.7	5.4	210	1590	10540	85
6300	560-2000	GR3A			1488	1228	97.6	97.6	0.92	0.91	40454	2.0	0.8	5.8	220	1630	10800	85
6500	560-2000	GR3A			1487	1282	97.5	97.6	0.91	0.91	41767	1.9	0.8	5.6	220	1630	10800	85
6-pole																		
710	400-1120	GR1	118-40M	GRT1	989	155	95.6	95.6	0.84	0.81	6859	2.3	1.2	4.9	26	1190	3520	85
800	400-1120	GR1	118-40M	GRT1	988	173	95.4	95.6	0.85	0.82	7737	2.2	1.1	4.6	28	1240	3640	85
900	400-1250	GR1	118-40L	GRT1	989	194	95.7	95.8	0.85	0.82	8695	2.3	1.2	4.9	32	1380	3920	85
1000	400-1250	GR1	118-40L	GRT1	989	215	95.8	95.9	0.85	0.82	9661	2.3	1.2	4.9	34	1470	4030	85
1120	450-1250	GR1	132-45M	GRT1	991	240	96.1	96.1	0.85	0.83	10799	1.9	0.8	5.0	51	1350	4660	85
1250	450-1250	GR1	132-45M	GRT1	991	265	96.1	96.2	0.86	0.84	12052	1.8	0.7	4.7	55	1390	4810	85
1400	450-1250	GR1	132-45M	GRT1	991	297	96.2	96.3	0.86	0.84	13498	1.8	0.8	4.8	59	1460	4960	85
1600	450-1400	GR1	132-45L	GRT1	991	342	96.4	96.5	0.85	0.83	15427	1.8	0.8	4.8	63	1500	5170	85
1800	450-1400	GR1	132-45L	GRT1	991	380	96.4	96.6	0.86	0.83	17355	1.8	0.8	4.8	71	1660	5480	85
2000	500-1600	GR1	150-50M	GRT1	990	428	96.3	96.4	0.85	0.83	19303	1.9	1.0	5.2	97	1740	6390	85
2250	500-1600	GR1	150-50M	GRT1	990	481	96.4	96.5	0.85	0.84	21716	1.9	1.0	5.1	100	1810	6580	85
2500	500-1600	GR1	150-50M	GRT1	990	528	96.4	96.6	0.86	0.85	24129	1.8	0.9	5.0	120	2020	6950	85
2800	500-1600	GR1	150-50M	GRT1	990	590	96.7	96.8	0.86	0.84	27024	1.9	0.9	5.0	120	2090	7130	85
3150	500-1800	GR1	150-50L	GRT1	991	663	96.8	96.8	0.86	0.83	30371	2.1	1.1	5.7	150	2400	7930	85
3550	560-1800	GR1			993	729	96.9	97.0	0.88	0.86	34159	2.1	0.7	5.1	210	2800	8990	85
4000	560-1800	GR1			993	821	96.9	97.0	0.88	0.86	38489	2.1	0.7	5.2	230	2860	9450	85
4500	560-2000	GR1			993	912	97.1	97.1	0.89	0.87	43300	2.2	0.8	5.5	270	3250	10440	85

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current A	Efficiency		Power factor		Torque Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm ²	External max. kgm ²		
3.3kV, 50Hz																		
8-pole																		
630	400-1120	GR1	118-40M	GRT1	742	145	95.1	95.2	0.80	0.76	8113	1.9	0.8	4.8	32	1630	3590	80
710	400-1120	GR1	118-40M	GRT1	741	160	94.8	95.2	0.82	0.79	9155	1.7	0.7	4.3	35	1670	3700	80
800	400-1250	GR1	118-40L	GRT1	742	182	95.1	95.4	0.81	0.78	10302	1.8	0.7	4.5	37	1770	3860	80
900	400-1250	GR1	118-40L	GRT1	742	202	95.3	95.5	0.82	0.78	11590	1.8	0.7	4.5	42	1930	4080	80
1000	450-1250	GR1	132-45M	GRT1	743	223	95.8	95.8	0.82	0.78	12860	2.0	0.8	4.5	71	3820	5030	80
1120	450-1400	GR1	132-45L	GRT1	744	256	96.0	95.9	0.80	0.75	14384	2.3	0.9	4.9	80	4280	5380	80
1250	450-1400	GR1	132-45L	GRT1	744	282	96.0	95.9	0.81	0.76	16053	2.2	0.9	4.8	84	4290	5530	80
1400	500-1600	GR1	150-50M	GRT1	743	319	96.0	95.9	0.80	0.77	18004	1.7	1.0	5.0	110	2880	6370	80
1600	500-1600	GR1	150-50M	GRT1	743	369	96.1	96.1	0.79	0.76	20576	1.8	1.0	5.2	130	3230	6730	80
1800	500-1600	GR1	150-50M	GRT1	743	409	96.3	96.2	0.80	0.78	23148	1.7	1.0	5.1	140	3420	7100	80
2000	500-1800	GR1	150-50L	GRT1	743	449	96.3	96.3	0.81	0.78	25720	1.7	0.9	5.1	150	3760	7520	80
2250	500-1800	GR1	150-50L	GRT1	743	505	96.4	96.4	0.81	0.78	28935	1.7	1.0	5.1	170	3960	7880	80
2500	560-1800	GR1	170-56M	GRT1	744	521	96.6	96.5	0.87	0.83	32107	2.3	0.8	5.6	240	5730	9090	80
2800	560-1800	GR1	170-56M	GRT1	744	583	96.7	96.6	0.87	0.84	35959	2.2	0.8	5.5	270	6440	9530	80
3150	560-2000	GR1	170-56L	GRT1	744	655	96.8	96.7	0.87	0.85	40454	2.2	0.8	5.5	290	6680	10050	80
3550	560-2000	GR1	170-56L	GRT1	744	737	96.9	96.8	0.87	0.84	45591	2.2	0.8	5.6	320	7130	10490	80
10-pole																		
560	400-1120	GR1	118-40M	GRT1	591	139	94.2	94.4	0.75	0.69	9054	1.7	0.8	4.2	31	2010	3440	80
630	400-1250	GR1	118-40L	GRT1	591	154	94.4	94.6	0.76	0.71	10185	1.7	0.8	4.2	36	2280	3710	80
710	400-1250	GR1	118-40L	GRT1	591	176	94.6	94.8	0.75	0.70	11479	1.8	0.8	4.3	41	2590	3940	80
800	450-1250	GR1	132-45M	GRT1	593	191	95.2	95.1	0.77	0.72	12890	1.9	0.8	4.6	69	3830	4870	80
900	450-1400	GR1	132-45L	GRT1	594	218	95.2	95.1	0.76	0.71	14477	2.0	0.9	4.8	77	4170	5220	80
1000	450-1400	GR1	132-45L	GRT1	594	242	95.2	95.2	0.76	0.71	16086	2.0	0.9	4.8	82	4310	5370	80
1120	500-1600	GR1	150-50M	GRT1	594	260	95.7	95.7	0.79	0.74	18016	2.0	0.7	4.9	110	4280	6170	80
1250	500-1600	GR1	150-50M	GRT1	594	289	95.8	95.7	0.79	0.73	20107	2.1	0.8	5.0	120	4600	6530	80
1400	500-1600	GR1	150-50M	GRT1	594	324	95.9	95.8	0.79	0.73	22520	2.1	0.8	5.1	140	5070	6890	80
1600	500-1800	GR1	150-50L	GRT1	594	374	96.0	95.9	0.78	0.72	25737	2.2	0.8	5.2	150	5430	7300	80
1800	500-1800	GR1	150-50L	GRT1	594	421	96.0	96.0	0.78	0.73	28954	2.1	0.8	5.1	160	5840	7670	80
2000	560-1800	GR1	170-56M	GRT1	593	449	96.3	96.3	0.81	0.78	32226	1.8	0.8	4.4	220	6540	8690	80
2250	560-1800	GR1	170-56M	GRT1	593	499	96.3	96.4	0.82	0.79	36254	1.8	0.7	4.3	250	6920	9130	80
2500	560-2000	GR1	170-56L	GRT1	593	554	96.4	96.5	0.82	0.79	40282	1.8	0.7	4.3	270	7690	9640	80
2800	560-2000	GR1	170-56L	GRT1	593	620	96.5	96.5	0.82	0.78	45116	1.9	0.8	4.5	310	8700	10310	80
12-pole																		
400	400-1120	GR1	118-40M	GRT1	492	107	93.5	93.6	0.70	0.64	7768	1.9	0.7	3.8	34	3670	3550	75
450	400-1250	GR1	118-40L	GRT1	491	116	93.5	93.8	0.73	0.68	8757	1.7	0.6	3.4	38	4040	3820	75
500	400-1250	GR1	118-40L	GRT1	491	128	93.7	94.0	0.73	0.68	9730	1.7	0.6	3.5	41	4210	3930	75
560	450-1250	GR1	132-45M	GRT1	492	143	94.5	94.6	0.73	0.68	10876	1.8	0.7	3.7	56	4690	4440	77
630	450-1250	GR1	132-45M	GRT1	492	160	94.6	94.6	0.73	0.67	12235	1.9	0.8	3.8	65	5320	4730	77
710	450-1250	GR1	132-45M	GRT1	492	178	94.7	94.8	0.74	0.69	13789	1.8	0.7	3.6	69	5410	4880	77
800	450-1400	GR1	132-45L	GRT1	492	200	94.9	95.0	0.74	0.69	15536	1.8	0.7	3.7	77	5870	5240	77
900	450-1400	GR1	132-45L	GRT1	492	222	94.7	94.9	0.75	0.70	17479	1.7	0.7	3.6	82	6020	5380	77
1000	500-1600	GR1	150-50M	GRT1	494	253	95.1	94.9	0.73	0.67	19342	2.4	0.8	4.4	140	9200	6850	77
1120	500-1800	GR1	150-50L	GRT1	493	275	95.2	95.1	0.75	0.69	21707	2.2	0.8	4.2	150	9900	7270	77
1250	500-1800	GR1	150-50L	GRT1	493	306	95.4	95.3	0.75	0.69	24227	2.2	0.8	4.3	160	10810	7630	77
1400	560-1800	GR1	170-56M	GRT1	493	344	95.2	95.0	0.75	0.69	27134	2.3	0.8	4.8	220	9700	8650	77
1600	560-1800	GR1	170-56M	GRT1	493	392	95.3	95.2	0.75	0.69	31010	2.4	0.8	4.9	260	10870	9320	77
1800	560-2000	GR1	170-56L	GRT1	493	441	95.4	95.3	0.75	0.70	34886	2.3	0.8	4.8	290	11490	9830	77
2000	560-2000	GR1	170-56L	GRT1	493	489	95.5	95.4	0.75	0.69	38762	2.3	0.8	4.9	310	12520	10270	77

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm^2	External max. kgm^2		
3.3kV, 60Hz																		
2-pole																		
1250	400-1120	GR2A			3573	261	96.4	96.3	0.87	0.84	3343	2.1	0.8	5.0	7	80	3430	85
1400	400-1120	GR2A			3572	290	96.3	96.3	0.88	0.87	3745	2.0	0.8	4.9	8	81	3560	85
1600	400-1120	GR2A			3574	330	96.6	96.5	0.88	0.86	4278	2.2	0.9	5.4	9	85	3690	85
1800	400-1120	GR2A			3574	366	96.7	96.7	0.89	0.87	4812	2.2	0.9	5.5	10	82	3830	85
2000	400-1120	GR2A			3574	407	96.8	96.8	0.89	0.87	5347	2.2	1.0	5.6	11	87	3960	85
2250	450-1400	GR2A			3568	464	96.6	96.4	0.88	0.86	6025	2.0	0.7	5.0	16	100	4390	85
2500	450-1400	GR2A			3569	514	96.8	96.6	0.88	0.86	6693	2.2	0.7	5.3	17	110	4620	85
2800	450-1400	GR2A			3567	569	96.9	96.7	0.89	0.88	7500	2.0	0.7	5.0	19	100	4840	85
3150	450-1400	GR2A			3566	632	97.0	96.9	0.90	0.89	8440	2.0	0.7	5.0	20	110	5070	85
3550	500-1600	GR3A			3581	721	96.9	96.7	0.89	0.88	9472	1.9	0.6	5.1	37	130	6410	85
4000	500-1600	GR3A			3583	810	97.1	96.8	0.89	0.88	10667	2.1	0.8	5.8	42	150	6890	85
4500	500-1600	GR3A			3581	912	97.1	97.0	0.89	0.88	12007	1.9	0.7	5.2	42	140	6890	85
4-pole																		
1400	400-1120	GR1A	118-40M	GRT1A	1786	292	96.6	96.5	0.87	0.85	7490	1.9	1.0	5.4	21	260	3510	85
1600	400-1120	GR1A	118-40M	GRT1A	1786	333	96.7	96.7	0.87	0.85	8560	1.9	1.0	5.3	22	280	3720	85
1800	400-1250	GR1A	118-40L	GRT1A	1787	374	96.9	96.9	0.87	0.85	9624	2.0	1.1	5.7	26	310	4080	85
2000	400-1250	GR1A	118-40L	GRT1A	1788	420	97.1	97.0	0.86	0.84	10688	2.0	1.1	5.9	28	330	4210	85
2250	450-1250	GR1A	132-45M	GRT1A	1792	468	96.8	96.7	0.87	0.85	11997	2.2	0.9	6.1	41	430	4730	85
2500	450-1250	GR1A	132-45M	GRT1A	1791	509	96.7	96.7	0.89	0.89	13337	1.9	0.8	5.5	47	460	5040	85
2800	450-1400	GR1A	132-45L	GRT1A	1792	568	97.0	96.9	0.89	0.88	14930	2.1	0.8	6.0	54	500	5420	85
3150	450-1400	GR1A	132-45L	GRT1A	1792	645	97.1	97.0	0.88	0.87	16796	2.1	0.9	6.1	54	450	5420	85
3550	500-1600	GR1A			1786	728	97.0	96.9	0.88	0.88	18992	1.9	0.7	5.1	80	560	6230	85
4000	500-1600	GR1A			1786	819	97.1	97.0	0.88	0.88	21400	1.9	0.7	5.1	85	590	6420	85
4500	500-1800	GR1A			1786	911	97.2	97.2	0.89	0.89	24075	1.8	0.7	5.0	96	640	6890	85
5000	500-1800	GR1A			1786	1012	97.2	97.3	0.89	0.89	26750	1.8	0.7	5.1	110	660	7280	85
5600	560-1800	GR3A			1786	1118	97.4	97.3	0.90	0.89	29959	2.0	0.7	5.5	150	930	8720	85
6000	560-1800	GR3A			1787	1197	97.5	97.4	0.90	0.89	32081	2.1	0.7	5.9	170	950	9210	85
6300	560-1800	GR3A			1786	1257	97.5	97.4	0.90	0.89	33704	2.0	0.7	5.6	170	930	9210	85
6500	560-1800	GR3A			1787	1296	97.5	97.5	0.90	0.90	34755	2.0	0.7	5.7	180	970	9450	85
7100	560-2000	GR3A			1787	1399	97.6	97.6	0.91	0.90	37963	2.0	0.7	5.8	190	990	10050	85
7500	560-2000	GR3A			1786	1478	97.6	97.6	0.91	0.91	40124	1.8	0.7	5.3	200	990	10300	85
8000	560-2000	GR3A			1787	1576	97.6	97.6	0.91	0.90	42775	2.1	0.8	6.1	220	1100	10800	85
8500	560-2000	GR3A			1786	1675	97.6	97.6	0.91	0.91	45474	2.0	0.7	5.7	220	1080	10800	85

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm^2	External max. kgm^2		
3.3kV, 60Hz																		
6-pole																		
900	400-1120	GR1	118-40M	GRT1	1189	201	96.0	96.0	0.82	0.78	7233	2.4	1.2	5.1	26	830	3540	85
1000	400-1120	GR1	118-40M	GRT1	1189	220	96.1	96.2	0.83	0.79	8036	2.4	1.2	5.1	28	850	3660	85
1120	400-1250	GR1	118-40L	GRT1	1189	243	96.3	96.4	0.84	0.81	9000	2.4	1.2	5.2	32	960	3940	85
1250	400-1250	GR1	118-40L	GRT1	1189	268	96.3	96.4	0.85	0.82	10045	2.2	1.1	4.9	34	990	4050	85
1400	450-1250	GR1	132-45M	GRT1	1191	307	96.2	96.2	0.83	0.81	11232	1.9	0.7	4.8	47	870	4510	85
1600	450-1250	GR1	132-45M	GRT1	1191	351	96.3	96.3	0.83	0.81	12836	1.8	0.7	4.7	51	880	4670	85
1800	450-1250	GR1	132-45M	GRT1	1192	398	96.5	96.4	0.82	0.78	14429	2.0	0.8	5.1	59	1020	4970	85
2000	450-1400	GR1	132-45L	GRT1	1191	427	96.6	96.6	0.85	0.83	16045	1.9	0.7	5.0	67	1100	5330	85
2250	450-1400	GR1	132-45L	GRT1	1191	485	96.8	96.7	0.84	0.82	18051	1.9	0.7	5.0	71	1180	5480	85
2500	500-1600	GR1	150-50M	GRT1	1191	553	96.6	96.4	0.82	0.78	20057	2.1	1.0	5.6	97	1260	6390	85
2800	500-1600	GR1	150-50M	GRT1	1190	596	96.7	96.7	0.85	0.82	22482	2.1	1.0	5.6	110	1350	6760	85
3150	500-1600	GR1	150-50M	GRT1	1190	670	96.8	96.8	0.85	0.83	25292	2.0	1.0	5.5	120	1380	7130	85
3550	500-1800	GR1	150-50L	GRT1	1190	755	96.9	96.9	0.85	0.83	28504	2.0	1.0	5.6	140	1460	7560	85
4000	500-1800	GR1	150-50L	GRT1	1191	859	97.0	96.9	0.84	0.81	32090	2.1	1.0	5.8	150	1600	7930	85
4500	560-1800	GR1			1192	934	96.9	96.9	0.87	0.86	36072	2.0	0.7	5.1	210	1790	9020	85
5000	560-1800	GR1			1192	1025	97.0	97.0	0.88	0.87	40079	2.0	0.6	5.0	230	2030	9480	85
5600	560-2000	GR1			1193	1133	97.2	97.1	0.89	0.87	44851	2.1	0.7	5.4	270	2210	10480	85
6000	560-2000	GR1			1192	1214	97.2	97.2	0.89	0.88	48095	2.0	0.6	5.1	270	2150	10480	85
8-pole																		
710	400-1120	GR1	118-40M	GRT1	892	161	95.5	95.5	0.81	0.78	7605	1.9	0.7	4.7	32	1140	3560	80
800	400-1120	GR1	118-40M	GRT1	892	179	95.6	95.7	0.82	0.78	8569	1.8	0.7	4.6	35	1200	3680	80
900	400-1250	GR1	118-40L	GRT1	893	203	95.8	95.8	0.81	0.78	9630	1.9	0.7	4.9	40	1360	3940	80
1000	400-1250	GR1	118-40L	GRT1	893	224	95.6	95.7	0.82	0.78	10700	1.8	0.7	4.7	42	1380	4050	80
1120	450-1250	GR1	132-45M	GRT1	893	253	95.8	95.6	0.81	0.76	11984	2.1	0.8	4.6	62	2400	4740	80
1250	450-1250	GR1	132-45M	GRT1	893	281	96.1	95.9	0.81	0.77	13375	2.0	0.8	4.5	66	2520	4890	80
1400	450-1400	GR1	132-45L	GRT1	894	311	96.1	96.0	0.82	0.78	14963	2.1	0.8	4.6	80	2910	5390	80
1600	450-1400	GR1	132-45L	GRT1	894	360	96.2	96.1	0.81	0.77	17101	2.1	0.8	4.6	84	3050	5540	80
1800	500-1600	GR1	150-50M	GRT1	893	414	96.3	96.1	0.79	0.75	19260	1.8	1.0	5.4	120	2050	6500	80
2000	500-1600	GR1	150-50M	GRT1	893	454	96.4	96.3	0.80	0.76	21400	1.7	0.9	5.1	130	2210	6680	80
2250	500-1600	GR1	150-50M	GRT1	893	523	96.5	96.3	0.78	0.74	24075	1.7	0.9	5.2	130	2220	6860	80
2500	500-1800	GR1	150-50L	GRT1	893	582	96.5	96.4	0.78	0.74	26750	1.8	1.0	5.3	150	2500	7280	80
2800	500-1800	GR1	150-50L	GRT1	893	634	96.6	96.5	0.80	0.77	29959	1.7	0.9	5.3	170	2700	7820	80
3150	560-1800	GR1	170-56M	GRT1	894	680	96.6	96.4	0.84	0.80	33667	2.2	0.7	5.5	230	3880	8880	80
3550	560-1800	GR1	170-56M	GRT1	894	755	96.8	96.6	0.85	0.81	37942	2.2	0.7	5.5	260	4090	9320	80
4000	560-2000	GR1	170-56L	GRT1	894	850	96.9	96.7	0.85	0.81	42751	2.3	0.8	5.8	290	4670	10050	80
4500	560-2000	GR1	170-56L	GRT1	894	979	96.9	96.7	0.83	0.79	48095	2.3	0.8	5.8	320	4830	10500	80

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor	External max.		
3.3kV, 60Hz																		
10-pole																		
630	400-1120	GR1	118-40M	GRT1	711	155	95.1	95.1	0.75	0.69	8466	1.9	0.8	4.5	34	1590	3560	80
710	400-1250	GR1	118-40L	GRT1	712	177	95.3	95.2	0.74	0.68	9528	2.0	0.9	4.7	38	1770	3830	80
800	400-1250	GR1	118-40L	GRT1	712	199	95.2	95.1	0.74	0.67	10736	1.9	0.9	4.7	41	1850	3940	80
900	450-1250	GR1	132-45M	GRT1	713	218	95.4	95.2	0.76	0.71	12061	2.0	0.8	4.7	60	2390	4580	80
1000	450-1250	GR1	132-45M	GRT1	713	242	95.4	95.2	0.76	0.70	13401	2.0	0.8	4.8	65	2500	4730	80
1120	450-1250	GR1	132-45M	GRT1	714	274	95.5	95.3	0.75	0.69	14988	2.0	0.8	4.8	69	2580	4880	80
1250	450-1400	GR1	132-45L	GRT1	714	302	95.5	95.4	0.76	0.70	16728	2.0	0.8	4.8	77	2840	5240	80
1400	450-1400	GR1	132-45L	GRT1	714	342	95.6	95.4	0.75	0.70	18735	2.0	0.8	4.8	82	2930	5390	80
1600	500-1600	GR1	150-50M	GRT1	713	365	96.1	96.0	0.80	0.75	21442	1.9	0.7	4.7	120	3190	6490	80
1800	500-1600	GR1	150-50M	GRT1	713	410	96.2	96.1	0.80	0.75	24122	1.9	0.7	4.8	140	3530	6850	80
2000	500-1800	GR1	150-50L	GRT1	714	461	96.2	96.1	0.79	0.75	26765	2.0	0.7	5.0	160	3990	7450	80
2250	500-1800	GR1	150-50L	GRT1	714	518	96.2	96.1	0.79	0.74	30110	2.0	0.7	5.0	160	4130	7630	80
2500	560-1800	GR1	170-56M	GRT1	713	567	96.5	96.4	0.80	0.77	33503	1.9	0.7	4.6	210	4250	8430	80
2800	560-1800	GR1	170-56M	GRT1	713	634	96.6	96.5	0.80	0.76	37523	1.9	0.8	4.7	220	4520	8650	80
3150	560-1800	GR1	170-56M	GRT1	713	713	96.7	96.6	0.80	0.76	42213	1.9	0.8	4.7	250	4790	9080	80
3550	560-2000	GR1	170-56L	GRT1	713	794	96.6	96.6	0.81	0.78	47574	1.8	0.7	4.6	290	5390	9820	80
4000	560-2000	GR1	170-56L	GRT1	713	904	96.8	96.8	0.80	0.76	53604	1.9	0.8	4.7	310	5750	10250	80
12-pole																		
400	400-1120	GR1	118-40M	GRT1	592	107	93.9	93.8	0.70	0.64	6456	1.9	0.7	3.8	29	2340	3330	75
450	400-1120	GR1	118-40M	GRT1	592	119	93.9	94.0	0.71	0.65	7263	1.8	0.7	3.7	31	2410	3450	75
500	400-1120	GR1	118-40M	GRT1	592	131	94.2	94.2	0.71	0.65	8070	1.8	0.7	3.7	34	2550	3560	75
560	400-1250	GR1	118-40L	GRT1	592	149	94.3	94.3	0.70	0.64	9038	1.9	0.7	3.9	38	2920	3830	75
630	400-1250	GR1	118-40L	GRT1	592	165	94.5	94.5	0.71	0.66	10168	1.8	0.7	3.8	41	3050	3940	75
710	450-1250	GR1	132-45M	GRT1	592	178	94.8	94.7	0.74	0.69	11459	1.8	0.7	3.8	60	3480	4600	77
800	450-1250	GR1	132-45M	GRT1	592	205	94.9	94.7	0.72	0.66	12912	2.0	0.8	4.0	69	3920	4890	77
900	450-1400	GR1	132-45L	GRT1	592	224	95.1	95.0	0.74	0.69	14526	1.8	0.7	3.8	77	4200	5250	77
1000	450-1400	GR1	132-45L	GRT1	592	249	95.1	95.1	0.74	0.69	16140	1.8	0.7	3.8	82	4430	5400	77
1120	500-1600	GR1	150-50M	GRT1	593	271	95.2	95.1	0.76	0.70	18046	2.1	0.7	4.1	120	5910	6490	77
1250	500-1600	GR1	150-50M	GRT1	593	306	95.4	95.2	0.75	0.69	20141	2.2	0.7	4.3	140	6420	6850	77
1400	500-1800	GR1	150-50L	GRT1	593	342	95.6	95.4	0.75	0.69	22558	2.2	0.7	4.3	150	6910	7270	77
1600	500-1800	GR1	150-50L	GRT1	593	386	95.6	95.5	0.76	0.70	25781	2.1	0.7	4.2	160	7410	7630	77
1800	560-1800	GR1	170-56M	GRT1	593	441	95.4	95.1	0.75	0.69	29003	2.4	0.7	4.9	240	7190	8890	77
2000	560-1800	GR1	170-56M	GRT1	592	489	95.5	95.2	0.75	0.70	32280	2.3	0.7	4.8	260	7720	9330	77
2250	560-2000	GR1	170-56L	GRT1	592	542	95.6	95.4	0.76	0.70	36315	2.3	0.7	4.8	290	8310	9840	77
2500	560-2000	GR1	170-56L	GRT1	593	610	95.7	95.5	0.75	0.69	40282	2.3	0.7	4.9	310	8550	10280	77

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current <i>I_{rated}</i> A	Efficiency		Power factor		Torque <i>T_{rated}</i> Nm	Break-down torque <i>T_B/T_{rated}</i>	Locked-rotor torque <i>T_{LR}/T_{rated}</i>	Locked-rotor current <i>I_{LR}/I_{rated}</i>	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm ²	External max. kgm ²		
6.6kV, 50Hz																		
2-pole																		
900	400-1120	GR2A			2977	97	96.0	95.9	0.85	0.82	2889	2.4	0.9	5.5	7	110	3300	85
1000	400-1120	GR2A			2975	106	96.0	96.0	0.86	0.83	3212	2.1	0.8	5.0	7	110	3300	85
1120	400-1120	GR2A			2974	117	95.8	96.0	0.88	0.85	3598	2.1	0.9	5.0	8	110	3430	85
1250	400-1120	GR2A			2977	131	96.2	96.2	0.87	0.84	4012	2.3	1.0	5.6	9	120	3550	85
1400	400-1120	GR2A			2976	145	96.3	96.3	0.88	0.86	4495	2.3	1.0	5.6	10	120	3690	85
1600	450-1400	GR2A			2973	169	96.5	96.4	0.86	0.82	5142	2.2	0.8	5.3	14	150	4130	85
1800	450-1400	GR2A			2972	188	96.7	96.6	0.87	0.84	5787	2.2	0.8	5.4	16	150	4350	85
2000	450-1400	GR2A			2973	208	96.8	96.7	0.87	0.85	6428	2.3	0.8	5.6	17	160	4570	85
2250	450-1400	GR2A			2973	231	97.0	96.9	0.88	0.85	7231	2.4	0.9	5.8	19	160	4800	85
2500	500-1600	GR3A			2982	263	96.7	96.6	0.86	0.84	8011	2.0	0.6	5.0	29	190	5760	85
2800	500-1600	GR3A			2983	294	96.9	96.7	0.86	0.84	8969	2.1	0.7	5.3	32	200	5960	85
3150	500-1600	GR3A			2985	331	97.0	96.8	0.86	0.82	10083	2.4	0.9	6.3	37	220	6360	85
3550	500-1600	GR3A			2985	372	97.1	96.9	0.86	0.83	11363	2.4	0.9	6.3	40	200	6630	85
4000	560-1800	GR3A			2985	415	97.0	96.9	0.87	0.85	12804	2.2	0.7	6.0	59	160	8110	85
4500	560-1800	GR3A			2983	457	96.9	96.9	0.89	0.88	14414	1.8	0.6	5.2	64	160	8370	85
5000	560-1800	GR3A			2984	507	97.1	97.1	0.89	0.88	16010	1.9	0.6	5.6	68	160	8620	85
5600	560-1800	GR3A			2984	567	97.2	97.2	0.89	0.88	17932	2.0	0.7	5.8	77	170	9140	85
6000	560-1800	GR3A			2983	600	97.2	97.3	0.90	0.90	19219	1.8	0.7	5.5	86	180	9630	85
6300	560-1800	GR3A			2985	629	97.4	97.4	0.90	0.88	20166	2.1	0.8	6.2	86	180	9630	85
6500	630-2000	GR3A			2981	658	97.1	96.9	0.89	0.88	20834	2.0	0.7	5.6	130	250	10980	85
7100	630-2000	GR3A			2982	710	97.2	97.0	0.90	0.90	22750	2.1	0.8	6.0	160	260	13850	85
7500	630-2000	GR3A			2981	750	97.2	97.1	0.90	0.90	24040	2.0	0.7	5.7	160	250	13850	85
8000	630-2000	GR3A			2980	800	97.3	97.1	0.90	0.90	25651	1.9	0.6	5.2	160	230	13850	85
4-pole																		
1000	400-1120	GR1A	118-40M	GRT1A	1489	106	96.3	96.2	0.86	0.83	6417	2.2	1.2	6.1	21	400	3480	85
1120	400-1250	GR1A	118-40L	GRT1A	1489	119	96.4	96.4	0.86	0.84	7187	2.2	1.2	6.1	22	420	3670	85
1250	400-1250	GR1A	118-40L	GRT1A	1488	131	96.4	96.5	0.87	0.85	8027	2.1	1.2	5.9	24	450	3790	85
1400	400-1250	GR1A	118-40L	GRT1A	1488	146	96.6	96.6	0.87	0.84	8990	2.1	1.2	5.8	26	460	4040	85
1600	450-1250	GR1A	132-45M	GRT1A	1490	166	96.2	96.3	0.88	0.87	10260	1.9	0.8	5.3	38	570	4570	85
1800	450-1250	GR1A	132-45M	GRT1A	1491	186	96.4	96.5	0.88	0.87	11535	2.0	0.8	5.5	41	620	4730	85
2000	450-1400	GR1A	132-45L	GRT1A	1491	204	96.7	96.7	0.89	0.88	12817	2.0	0.9	5.8	47	660	4990	85
2250	450-1400	GR1A	132-45L	GRT1A	1492	229	96.7	96.7	0.89	0.87	14409	2.1	1.0	6.2	54	700	5420	85
2500	450-1400	GR1A	132-45L	GRT1A	1491	254	96.8	96.9	0.89	0.88	16021	2.0	0.9	5.6	54	690	5420	85
2800	500-1600	GR1A			1488	288	96.7	96.7	0.88	0.87	17980	2.0	0.8	5.3	80	840	6190	85
3150	500-1600	GR1A			1487	324	96.8	96.9	0.88	0.87	20241	2.0	0.8	5.3	85	880	6380	85
3550	500-1800	GR1A			1488	364	97.0	97.0	0.88	0.87	22796	2.2	0.9	5.9	100	980	7040	85
4000	500-1800	GR1A			1488	405	97.1	97.1	0.89	0.87	25685	2.1	0.9	5.6	110	970	7230	85
4500	560-1800	GR3A			1488	450	97.2	97.1	0.90	0.89	28896	2.2	0.8	6.1	170	1450	9140	85
5000	560-1800	GR3A			1488	500	97.2	97.1	0.90	0.89	32107	2.1	0.8	5.9	180	1530	9380	85
5600	560-2000	GR3A			1488	560	97.3	97.2	0.90	0.90	35959	2.0	0.8	5.7	190	1520	9740	85
6000	560-2000	GR3A			1488	593	97.3	97.3	0.91	0.90	38528	2.1	0.9	6.2	210	1700	10460	85
6300	560-2000	GR3A			1488	622	97.4	97.3	0.91	0.90	40454	2.1	0.9	6.2	210	1660	10460	85
6500	560-2000	GR3A			1488	642	97.4	97.3	0.91	0.90	41739	2.1	0.8	5.9	210	1610	10460	85
7100	630-2000	GR3A			1487	719	97.1	97.1	0.89	0.89	45622	1.8	0.6	5.2	290	1670	11410	85
7500	630-2000	GR3A			1488	759	97.2	97.1	0.89	0.89	48160	1.9	0.6	5.5	310	1670	11730	85
8000	630-2240	GR3A			1488	809	97.3	97.2	0.89	0.89	51371	2.0	0.7	5.8	320	1650	12230	85
8500	630-2240	GR3A			1488	859	97.3	97.3	0.89	0.89	54581	1.9	0.6	5.4	320	1610	12230	85
9000	630-2240	GR3A			1488	909	97.4	97.3	0.89	0.89	57792	2.0	0.7	5.7	360	1840	12860	85
10000	630-2240	GR3A			1488	997	97.5	97.4	0.90	0.89	64213	2.0	0.7	5.8	390	1900	13490	85

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current A	Efficiency		Power factor		Torque Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm ²	External max. kgm ²		
6.6kV, 50Hz																		
6-pole																		
710	400-1120	GR1	118-40M	GRT1	990	79	95.3	95.4	0.83	0.79	6853	2.4	1.2	5.0	26	1190	3500	85
800	400-1120	GR1	118-40M	GRT1	988	87	94.8	95.1	0.85	0.82	7737	2.1	1.1	4.6	28	1200	3620	85
900	400-1250	GR1	118-40L	GRT1	989	98	95.3	95.5	0.85	0.82	8695	2.3	1.1	4.8	32	1340	3890	85
1000	400-1250	GR1	118-40L	GRT1	989	108	95.5	95.7	0.85	0.82	9661	2.3	1.2	4.9	34	1390	4010	85
1120	450-1250	GR1	132-45M	GRT1	991	120	95.7	95.9	0.86	0.84	10799	1.8	0.7	4.7	51	1310	4620	85
1250	450-1250	GR1	132-45M	GRT1	991	133	95.9	96.1	0.86	0.84	12052	1.8	0.7	4.7	55	1410	4770	85
1400	450-1250	GR1	132-45M	GRT1	991	149	96.0	96.2	0.86	0.84	13498	1.8	0.7	4.7	59	1430	4920	85
1600	450-1400	GR1	132-45L	GRT1	991	172	96.2	96.3	0.85	0.83	15427	1.9	0.8	5.0	67	1560	5280	85
1800	450-1400	GR1	132-45L	GRT1	991	191	96.3	96.4	0.86	0.83	17355	1.8	0.8	4.8	71	1640	5430	85
2000	500-1600	GR1	150-50M	GRT1	991	214	96.4	96.4	0.85	0.82	19283	2.1	1.1	5.6	100	1940	6510	85
2250	500-1600	GR1	150-50M	GRT1	991	240	96.5	96.5	0.85	0.83	21694	2.1	1.1	5.7	120	2060	6880	85
2500	500-1600	GR1	150-50M	GRT1	990	264	96.4	96.5	0.86	0.84	24129	2.0	1.0	5.3	120	2080	7060	85
2800	500-1800	GR1	150-50L	GRT1	991	295	96.7	96.7	0.86	0.83	26997	2.2	1.1	5.9	140	2360	7660	85
3150	500-1800	GR1	150-50L	GRT1	991	332	96.7	96.7	0.86	0.83	30371	2.1	1.1	5.6	150	2350	7840	85
3550	560-1800	GR1			993	365	96.8	96.9	0.88	0.87	34159	2.1	0.7	5.2	220	2830	9140	85
4000	560-2000	GR1			993	411	96.9	96.9	0.88	0.86	38489	2.2	0.8	5.6	250	3100	9890	85
4500	560-2000	GR1			993	456	97.0	97.0	0.89	0.87	43300	2.2	0.8	5.4	270	3370	10340	85
5000	630-2000	GR3			990	508	96.8	96.7	0.89	0.86	48257	2.1	0.8	6.0	390	2970	11660	85
5600	630-2240	GR3			990	562	96.9	96.8	0.90	0.87	54048	2.1	0.8	6.0	430	3310	12340	85
6000	630-2240	GR3			990	608	97.0	96.9	0.89	0.86	57909	2.2	0.8	6.3	460	3540	12940	85
6300	630-2240	GR3			990	639	97.0	96.9	0.89	0.86	60804	2.1	0.8	6.0	460	3480	12940	85
6500	630-2240	GR3			990	658	97.1	97.0	0.89	0.85	62734	2.2	0.8	6.2	480	3500	13240	85
8-pole																		
560	400-1120	GR1	118-40M	GRT1	742	65	94.4	94.6	0.81	0.78	7211	1.9	0.8	4.7	32	1590	3570	80
630	400-1120	GR1	118-40M	GRT1	742	72	94.6	94.8	0.81	0.77	8113	1.9	0.8	4.8	35	1690	3680	80
710	400-1250	GR1	118-40L	GRT1	743	82	94.9	95.0	0.80	0.76	9131	1.9	0.8	4.9	37	1840	3830	80
800	400-1250	GR1	118-40L	GRT1	743	91	95.0	95.2	0.81	0.76	10288	2.0	0.8	5.0	42	2000	4060	80
900	450-1250	GR1	132-45M	GRT1	744	104	95.4	95.3	0.80	0.75	11558	2.2	0.9	4.6	62	3360	4700	80
1000	450-1250	GR1	132-45M	GRT1	744	115	95.5	95.4	0.80	0.75	12843	2.1	0.9	4.6	66	3580	4840	80
1120	450-1400	GR1	132-45L	GRT1	744	128	95.8	95.7	0.80	0.75	14384	2.3	0.9	4.9	80	4190	5340	80
1250	450-1400	GR1	132-45L	GRT1	744	141	95.8	95.7	0.81	0.76	16053	2.2	0.9	4.7	84	4300	5480	80
1400	500-1600	GR1	150-50M	GRT1	743	160	95.9	95.9	0.80	0.77	18004	1.7	0.9	5.0	110	2850	6320	80
1600	500-1600	GR1	150-50M	GRT1	743	185	96.0	96.0	0.79	0.76	20576	1.8	1.0	5.2	130	3200	6680	80
1800	500-1600	GR1	150-50M	GRT1	743	205	96.1	96.1	0.80	0.78	23148	1.7	0.9	5.0	140	3530	7040	80
2000	500-1800	GR1	150-50L	GRT1	744	230	96.3	96.2	0.79	0.75	25685	1.9	1.1	5.6	160	4010	7630	80
2250	500-1800	GR1	150-50L	GRT1	743	253	96.3	96.3	0.81	0.78	28935	1.7	1.0	5.1	170	3910	7810	80
2500	560-1800	GR1	170-56M	GRT1	744	271	96.4	96.3	0.84	0.80	32107	2.3	0.8	5.6	230	5400	8790	80
2800	560-1800	GR1	170-56M	GRT1	744	302	96.6	96.5	0.84	0.80	35959	2.4	0.9	5.9	270	6320	9450	80
3150	560-2000	GR1	170-56L	GRT1	744	336	96.7	96.6	0.85	0.81	40454	2.4	0.9	5.9	290	6610	9950	80
3550	560-2000	GR1	170-56L	GRT1	744	382	96.8	96.7	0.84	0.80	45591	2.4	0.9	5.8	320	7120	10390	80
4000	630-2000	GR3	190-63M	GRT1	740	422	96.5	96.4	0.86	0.83	51648	2.0	0.7	5.5	450	5540	11170	85
4500	630-2240	GR3	190-63L	GRT1	740	474	96.6	96.5	0.86	0.84	58104	2.0	0.7	5.5	490	5850	11830	85
5000	630-2240	GR3	190-63L	GRT1	740	520	96.8	96.7	0.87	0.84	64560	2.0	0.7	5.5	560	6490	12700	85

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current <i>I_{rated}</i> A	Efficiency		Power factor		Torque <i>T_{rated}</i> Nm	Break-down torque <i>T_B/T_{rated}</i>	Locked-rotor torque <i>T_{LR}/T_{rated}</i>	Locked-rotor current <i>I_{LR}/I_{rated}</i>	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm ²	External max. kgm ²		
6.6kV, 50Hz																		
10-pole																		
450	400-1120	GR1	118-40M	GRT1	591	58	93.3	93.5	0.74	0.68	7275	1.8	0.9	4.3	29	1940	3300	80
500	400-1120	GR1	118-40M	GRT1	591	63	93.7	93.9	0.75	0.70	8084	1.8	0.8	4.2	34	2160	3520	80
560	400-1250	GR1	118-40L	GRT1	592	71	93.9	94.1	0.74	0.68	9038	1.9	0.9	4.5	36	2350	3680	80
630	400-1250	GR1	118-40L	GRT1	592	80	94.2	94.2	0.74	0.67	10168	2.0	0.9	4.6	41	2590	3900	80
710	450-1250	GR1	132-45M	GRT1	594	88	94.7	94.6	0.75	0.69	11421	2.0	0.9	4.8	60	3450	4540	80
800	450-1250	GR1	132-45M	GRT1	594	100	94.9	94.7	0.74	0.68	12869	2.1	1.0	5.0	69	3800	4830	80
900	450-1400	GR1	132-45L	GRT1	594	112	95.1	95.0	0.74	0.68	14477	2.2	1.0	5.1	77	4200	5180	80
1000	450-1400	GR1	132-45L	GRT1	594	121	95.2	95.1	0.76	0.70	16086	2.1	0.9	4.9	82	4350	5320	80
1120	500-1600	GR1	150-50M	GRT1	594	132	95.4	95.3	0.78	0.73	18016	2.1	0.8	5.1	110	4470	6270	80
1250	500-1600	GR1	150-50M	GRT1	594	147	95.5	95.4	0.78	0.72	20107	2.1	0.8	5.1	120	4620	6450	80
1400	500-1600	GR1	150-50M	GRT1	594	163	95.6	95.6	0.79	0.73	22520	2.1	0.8	5.0	140	5000	6810	80
1600	500-1800	GR1	150-50L	GRT1	594	186	95.7	95.7	0.79	0.74	25737	2.0	0.7	5.0	150	5400	7220	80
1800	500-1800	GR1	150-50L	GRT1	594	209	95.7	95.7	0.79	0.73	28954	2.1	0.8	5.1	160	5730	7570	80
2000	560-1800	GR1	170-56M	GRT1	593	225	96.1	96.2	0.81	0.78	32226	1.9	0.8	4.5	240	6940	8830	80
2250	560-1800	GR1	170-56M	GRT1	593	253	96.2	96.2	0.81	0.77	36254	2.0	0.8	4.8	260	7630	9270	80
2500	560-2000	GR1	170-56L	GRT1	593	281	96.2	96.3	0.81	0.78	40282	1.9	0.8	4.6	290	8000	9780	80
2800	560-2000	GR1	170-56L	GRT1	593	311	96.3	96.4	0.82	0.78	45116	1.9	0.8	4.5	310	8240	10210	80
3150	630-2000	GR3	190-63M	GRT1	595	353	96.6	96.6	0.81	0.78	50585	1.9	0.8	5.1	440	9050	11080	85
3550	630-2240	GR3	190-63L	GRT1	595	397	96.7	96.7	0.81	0.79	57008	1.9	0.7	5.0	480	9460	11740	85
4000	630-2240	GR3	190-63L	GRT1	595	441	96.8	96.8	0.82	0.79	64235	1.9	0.7	5.0	520	9740	12320	85
12-pole																		
315	400-1120	GR1	118-40M	GRT1	492	42	93.2	93.2	0.71	0.65	6117	1.9	0.7	3.7	31	3500	3410	75
355	400-1120	GR1	118-40M	GRT1	492	47	92.7	93.0	0.72	0.66	6894	1.8	0.7	3.6	34	3630	3520	75
400	400-1250	GR1	118-40L	GRT1	492	53	93.0	93.1	0.71	0.65	7768	1.9	0.7	3.7	38	4040	3780	75
450	400-1250	GR1	118-40L	GRT1	492	59	93.3	93.4	0.72	0.66	8739	1.9	0.7	3.7	41	4370	3890	75
500	450-1250	GR1	132-45M	GRT1	492	64	93.9	93.9	0.73	0.67	9710	1.9	0.8	3.8	56	4690	4400	77
560	450-1250	GR1	132-45M	GRT1	492	70	93.9	94.1	0.75	0.70	10876	1.7	0.7	3.6	65	5260	4700	77
630	450-1250	GR1	132-45M	GRT1	492	79	94.2	94.3	0.75	0.70	12235	1.7	0.7	3.6	69	5410	4840	77
710	450-1400	GR1	132-45L	GRT1	492	90	94.3	94.5	0.74	0.69	13789	1.8	0.7	3.7	73	5620	5050	77
800	450-1400	GR1	132-45L	GRT1	492	99	94.6	94.7	0.75	0.70	15536	1.8	0.7	3.7	82	6230	5340	77
900	500-1600	GR1	150-50M	GRT1	493	111	94.8	94.7	0.75	0.69	17443	2.2	0.7	4.2	120	8450	6440	77
1000	500-1600	GR1	150-50M	GRT1	493	123	95.0	94.9	0.75	0.69	19381	2.2	0.7	4.2	140	9230	6790	77
1120	500-1800	GR1	150-50L	GRT1	493	138	94.9	94.9	0.75	0.69	21707	2.2	0.7	4.2	150	9970	7200	77
1250	500-1800	GR1	150-50L	GRT1	493	152	95.1	95.0	0.76	0.71	24227	2.1	0.7	4.1	160	10650	7560	77
1400	560-1800	GR1	170-56M	GRT1	493	173	94.8	94.7	0.75	0.69	27134	2.3	0.8	4.7	220	9580	8560	77
1600	560-1800	GR1	170-56M	GRT1	493	197	95.1	94.9	0.75	0.69	31010	2.4	0.8	4.9	260	10800	9210	77
1800	560-2000	GR1	170-56L	GRT1	493	221	95.2	95.1	0.75	0.70	34886	2.3	0.7	4.8	290	11300	9720	77
2000	560-2000	GR1	170-56L	GRT1	493	245	95.3	95.2	0.75	0.69	38762	2.3	0.8	4.8	310	12350	10150	77
2250	630-2000	GR3	190-63M	GRT1	495	270	96.1	96.1	0.76	0.71	43432	1.9	0.7	4.9	440	11510	11690	85
2500	630-2240	GR3	190-63L	GRT1	495	300	96.1	96.1	0.76	0.71	48257	1.9	0.7	4.9	480	12410	11690	85
2800	630-2240	GR3	190-63L	GRT1	495	335	96.3	96.2	0.76	0.71	54048	1.9	0.7	5.0	520	13470	12270	85

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load $\cos \varphi$	3/4 load $\cos \varphi$					Motor kgm^2	External max. kgm^2		
6.6kV, 60Hz																		
2-pole																		
1120	400-1120	GR2A			3577	120	96.2	96.0	0.85	0.81	2992	2.4	0.9	5.5	7	82	3380	85
1250	400-1120	GR2A			3574	133	96.2	96.1	0.86	0.83	3342	2.2	0.8	5.0	7	80	3380	85
1400	400-1120	GR2A			3575	148	96.4	96.3	0.86	0.83	3742	2.3	0.9	5.4	8	85	3510	85
1600	400-1120	GR2A			3574	165	96.4	96.4	0.88	0.86	4278	2.2	0.8	5.2	9	85	3630	85
1800	400-1120	GR2A			3574	184	96.6	96.6	0.89	0.87	4812	2.1	0.9	5.3	10	83	3770	85
2000	450-1400	GR2A			3570	212	96.3	96.0	0.86	0.83	5353	2.1	0.7	5.1	14	100	4160	85
2250	450-1400	GR2A			3570	235	96.5	96.2	0.87	0.84	6022	2.2	0.7	5.2	16	100	4380	85
2500	450-1400	GR2A			3570	260	96.7	96.4	0.87	0.85	6691	2.3	0.8	5.5	17	100	4610	85
2800	450-1400	GR2A			3571	291	96.9	96.6	0.87	0.84	7492	2.4	0.8	5.9	19	110	4830	85
3150	500-1600	GR3A			3584	335	96.8	96.6	0.85	0.82	8398	2.3	0.7	5.9	32	130	5920	85
3550	500-1600	GR3A			3583	373	97.0	96.8	0.86	0.83	9467	2.1	0.7	5.4	32	130	5920	85
4000	500-1600	GR3A			3584	415	97.1	96.9	0.87	0.84	10664	2.3	0.8	6.0	37	130	6330	85
4500	500-1600	GR3A			3584	471	97.2	97.0	0.86	0.84	11997	2.3	0.8	6.2	40	140	6590	85
5000	560-1800	GR3A			3585	519	97.0	96.7	0.87	0.85	13326	2.1	0.6	5.9	59	110	8090	85
5600	560-1800	GR3A			3585	574	97.1	96.9	0.88	0.87	14925	2.2	0.7	6.2	68	110	8610	85
6000	560-1800	GR3A			3584	608	97.1	97.0	0.89	0.87	15996	2.0	0.6	5.8	68	100	8610	85
6300	560-1800	GR3A			3584	638	97.2	97.1	0.89	0.88	16796	2.0	0.6	5.8	73	110	8870	85
6500	560-1800	GR3A			3586	657	97.3	97.1	0.89	0.87	17319	2.2	0.7	6.4	77	97	9130	85
7100	560-1800	GR3A			3584	718	97.3	97.2	0.89	0.88	18929	2.0	0.6	5.9	77	92	9130	85
7500	560-1800	GR3A			3583	758	97.3	97.2	0.89	0.88	20001	1.9	0.6	5.6	77	89	9130	85
8000	560-1800	GR3A			3586	808	97.4	97.4	0.89	0.88	21316	2.1	0.7	6.5	86	100	9610	85
8500	630-2000	GR3A			3580	862	97.0	96.7	0.89	0.89	22686	2.0	0.6	5.7	140	120	11360	85
9000	630-2000	GR3A			3579	912	97.1	96.8	0.89	0.89	24028	1.9	0.6	5.4	140	110	11360	85
9500	630-2000	GR3A			3581	950	97.2	96.9	0.90	0.89	25348	2.2	0.7	6.3	160	130	13850	85
10000	630-2000	GR3A			3581	999	97.3	97.0	0.90	0.89	26682	2.1	0.7	6.0	160	130	13850	85

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm ²	External max. kgm ²		
6.6kV, 60Hz																		
4-pole																		
1250	400-1120	GR1A	118-40M	GRT1A	1787	133	96.2	96.2	0.86	0.84	6684	1.9	1.0	5.3	19	250	3360	85
1400	400-1120	GR1A	118-40M	GRT1A	1786	148	96.4	96.4	0.86	0.85	7490	1.9	1.0	5.3	21	260	3480	85
1600	400-1250	GR1A	118-40L	GRT1A	1787	167	96.6	96.6	0.87	0.85	8555	2.0	1.0	5.6	24	290	3790	85
1800	400-1250	GR1A	118-40L	GRT1A	1787	187	96.8	96.7	0.87	0.85	9624	2.0	1.0	5.6	26	310	4040	85
2000	450-1250	GR1A	132-45M	GRT1A	1792	209	96.5	96.4	0.87	0.85	10664	2.1	0.8	5.8	38	400	4540	85
2250	450-1250	GR1A	132-45M	GRT1A	1792	232	96.7	96.6	0.88	0.86	11997	2.0	0.8	5.8	41	410	4700	85
2500	450-1250	GR1A	132-45M	GRT1A	1792	257	96.7	96.6	0.88	0.86	13330	2.2	0.9	6.2	47	470	5000	85
2800	450-1400	GR1A	132-45L	GRT1A	1792	288	96.9	96.8	0.88	0.86	14930	2.1	0.9	6.1	51	480	5210	85
3150	450-1400	GR1A	132-45L	GRT1A	1792	323	97.0	96.9	0.88	0.86	16796	2.1	0.9	6.1	54	450	5380	85
3550	500-1600	GR1A			1786	365	96.8	96.8	0.88	0.88	18992	1.9	0.7	5.0	80	580	6170	85
4000	500-1600	GR1A			1786	411	96.9	96.9	0.88	0.88	21400	1.8	0.7	5.0	85	560	6360	85
4500	500-1800	GR1A			1788	461	97.2	97.1	0.88	0.87	24048	2.1	0.8	5.7	100	650	7010	85
5000	500-1800	GR1A			1787	506	97.2	97.2	0.89	0.88	26735	2.0	0.8	5.5	110	680	7200	85
5600	560-1800	GR3A			1787	560	97.2	97.0	0.90	0.89	29943	2.0	0.7	5.7	160	910	8870	85
6000	560-1800	GR3A			1787	600	97.3	97.1	0.90	0.89	32081	2.1	0.7	5.8	170	990	9120	85
6300	560-1800	GR3A			1787	630	97.3	97.2	0.90	0.89	33686	2.0	0.7	5.8	180	950	9360	85
6500	560-2000	GR3A			1788	649	97.4	97.2	0.90	0.88	34736	2.2	0.8	6.3	190	1040	9710	85
7100	560-2000	GR3A			1787	709	97.4	97.3	0.90	0.89	37963	2.1	0.7	5.9	190	1030	9950	85
7500	560-2000	GR3A			1787	741	97.4	97.3	0.91	0.90	40102	2.0	0.7	5.9	200	1070	10190	85
8000	560-2000	GR3A			1787	799	97.4	97.3	0.90	0.89	42775	2.1	0.8	6.2	210	1010	10430	85
8500	630-2000	GR3A			1788	869	97.3	97.1	0.88	0.87	45423	2.3	0.7	6.6	310	1130	12230	85
9000	630-2240	GR3A			1788	910	97.3	97.1	0.89	0.88	48095	2.1	0.6	6.1	320	1150	12860	85
9500	630-2240	GR3A			1788	959	97.4	97.2	0.89	0.88	50767	2.2	0.7	6.5	360	1210	12860	85
10000	630-2240	GR3A			1788	1010	97.4	97.3	0.89	0.89	53439	2.1	0.7	6.2	360	1190	13260	85
10500	630-2240	GR3A			1788	1059	97.5	97.3	0.89	0.88	56111	2.2	0.7	6.4	370	1180	13490	85
11000	630-2240	GR3A			1788	1109	97.5	97.3	0.89	0.89	58783	2.2	0.7	6.5	390	1240	13490	85

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current <i>I_{rated}</i> A	Efficiency		Power factor		Torque <i>T_{rated}</i> Nm	Break-down torque <i>T_B/T_{rated}</i>	Locked-rotor torque <i>T_{LR}/T_{rated}</i>	Locked-rotor current <i>I_{LR}/I_{rated}</i>	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm ²	External max. kgm ²		
6.6kV, 60Hz																		
6-pole																		
800	400-1120	GR1	118-40M	GRT1	1187	88	95.5	95.7	0.84	0.82	6440	2.0	1.0	4.3	22	720	3330	85
900	400-1120	GR1	118-40M	GRT1	1187	97	95.6	95.9	0.85	0.84	7245	1.9	0.9	4.2	26	810	3540	85
1000	400-1120	GR1	118-40M	GRT1	1188	108	95.8	96.0	0.85	0.83	8043	2.1	1.0	4.5	28	840	3650	85
1120	400-1250	GR1	118-40L	GRT1	1188	121	95.9	96.1	0.85	0.83	9008	2.2	1.0	4.8	32	980	3910	85
1250	400-1250	GR1	118-40L	GRT1	1189	135	96.0	96.2	0.85	0.82	10045	2.2	1.1	4.8	34	970	4010	85
1400	450-1250	GR1	132-45M	GRT1	1191	154	96.0	96.0	0.83	0.81	11232	1.9	0.7	4.8	47	860	4470	85
1600	450-1250	GR1	132-45M	GRT1	1191	174	96.3	96.2	0.84	0.81	12836	1.9	0.7	5.0	55	980	4770	85
1800	450-1250	GR1	132-45M	GRT1	1191	197	96.4	96.4	0.83	0.80	14441	1.9	0.7	5.0	59	1010	4920	85
2000	450-1400	GR1	132-45L	GRT1	1191	214	96.5	96.5	0.85	0.83	16045	1.9	0.7	5.0	67	1090	5280	85
2250	450-1400	GR1	132-45L	GRT1	1191	243	96.6	96.6	0.84	0.82	18051	1.9	0.7	4.9	71	1170	5430	85
2500	500-1600	GR1	150-50M	GRT1	1189	264	96.4	96.4	0.86	0.84	20090	1.8	0.8	4.9	97	1210	6340	85
2800	500-1600	GR1	150-50M	GRT1	1190	296	96.5	96.5	0.86	0.83	22482	1.9	0.9	5.3	110	1330	6710	85
3150	500-1600	GR1	150-50M	GRT1	1190	332	96.7	96.7	0.86	0.85	25292	1.9	0.9	5.1	120	1400	7070	85
3550	500-1800	GR1	150-50L	GRT1	1190	374	96.7	96.7	0.86	0.84	28504	2.0	0.9	5.4	140	1510	7490	85
4000	500-1800	GR1	150-50L	GRT1	1190	421	96.8	96.9	0.86	0.84	32117	2.0	0.9	5.4	150	1580	7860	85
4500	560-1800	GR1			1192	457	96.8	96.8	0.89	0.88	36072	1.9	0.6	4.9	220	1970	9170	85
5000	560-1800	GR1			1192	513	96.9	96.9	0.88	0.87	40079	1.9	0.6	4.9	230	1970	9400	85
5600	560-2000	GR1			1193	574	97.0	97.0	0.88	0.87	44851	2.1	0.7	5.2	260	2130	10150	85
6000	560-2000	GR1			1192	608	97.1	97.1	0.89	0.88	48095	2.0	0.6	5.0	270	2270	10380	85
6300	630-2000	GR3			1189	662	96.9	96.6	0.86	0.81	50628	2.2	0.7	6.1	390	1990	11660	85
6500	630-2240	GR3			1189	660	96.9	96.7	0.89	0.86	52235	2.1	0.7	6.0	410	2120	12030	85
7100	630-2240	GR3			1189	720	97.0	96.8	0.89	0.86	57056	2.1	0.7	6.2	440	2180	12630	85
7500	630-2240	GR3			1189	768	97.1	96.9	0.88	0.84	60271	2.2	0.8	6.3	460	2390	12940	85
8000	630-2240	GR3			1189	819	97.1	96.9	0.88	0.85	64289	2.1	0.7	6.2	480	2250	13240	85
8-pole																		
630	400-1120	GR1	118-40M	GRT1	893	73	95.2	95.2	0.80	0.76	6741	2.1	0.8	5.2	32	1180	3540	80
710	400-1120	GR1	118-40M	GRT1	894	82	95.4	95.4	0.80	0.75	7588	2.1	0.8	5.3	35	1270	3650	80
800	400-1250	GR1	118-40L	GRT1	894	92	95.6	95.5	0.80	0.75	8550	2.1	0.8	5.3	40	1380	3910	80
900	400-1250	GR1	118-40L	GRT1	893	103	95.2	95.3	0.81	0.76	9630	2.0	0.8	5.1	42	1400	4020	80
1000	450-1250	GR1	132-45M	GRT1	894	115	95.5	95.3	0.80	0.76	10688	2.1	0.8	4.6	58	2290	4560	80
1120	450-1250	GR1	132-45M	GRT1	893	127	95.6	95.4	0.81	0.76	11984	2.1	0.8	4.5	62	2340	4700	80
1250	450-1250	GR1	132-45M	GRT1	893	141	95.9	95.7	0.81	0.77	13375	2.0	0.7	4.4	66	2480	4850	80
1400	450-1400	GR1	132-45L	GRT1	894	156	95.9	95.8	0.82	0.78	14963	2.1	0.8	4.6	80	2860	5350	80
1600	450-1400	GR1	132-45L	GRT1	894	180	96.0	95.9	0.81	0.77	17101	2.0	0.8	4.6	84	3010	5490	80
1800	500-1600	GR1	150-50M	GRT1	893	205	96.2	96.0	0.80	0.77	19260	1.7	0.9	5.0	120	2110	6450	80
2000	500-1600	GR1	150-50M	GRT1	893	228	96.3	96.1	0.80	0.76	21400	1.7	0.9	5.1	130	2200	6630	80
2250	500-1600	GR1	150-50M	GRT1	893	256	96.3	96.3	0.80	0.78	24075	1.7	0.9	5.0	140	2410	6990	80
2500	500-1800	GR1	150-50L	GRT1	893	284	96.4	96.3	0.80	0.78	26750	1.7	0.9	5.1	150	2590	7400	80
2800	500-1800	GR1	150-50L	GRT1	893	318	96.5	96.4	0.80	0.77	29959	1.7	0.9	5.2	170	2670	7750	80
3150	560-1800	GR1	170-56M	GRT1	893	333	96.5	96.3	0.86	0.82	33704	2.1	0.7	5.3	230	3770	8810	80
3550	560-1800	GR1	170-56M	GRT1	894	379	96.6	96.5	0.85	0.81	37942	2.2	0.7	5.5	260	4030	9250	80
4000	560-2000	GR1	170-56L	GRT1	894	426	96.8	96.6	0.85	0.81	42751	2.3	0.8	5.7	290	4600	9980	80
4500	560-2000	GR1	170-56L	GRT1	894	479	96.8	96.7	0.85	0.82	48095	2.2	0.7	5.6	320	4990	10410	80
5000	630-2000	GR3	190-63M	GRT1	889	527	96.6	96.4	0.86	0.83	53740	1.9	0.6	5.4	450	3720	11170	85
5600	630-2240	GR3	190-63L	GRT1	889	596	96.8	96.6	0.85	0.83	60189	2.0	0.6	5.5	490	4020	11830	85
6000	630-2240	GR3	190-63L	GRT1	889	631	96.8	96.6	0.86	0.83	64488	2.0	0.7	5.8	560	4560	12700	85
6300	630-2240	GR3	190-63L	GRT1	889	663	96.8	96.7	0.86	0.84	67712	1.9	0.6	5.5	560	4440	12700	85

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm ²	External max. kgm ²		
6.6kV, 60Hz																		
10-pole																		
500	400-1120	GR1	118-40M	GRT1	712	66	94.2	94.1	0.71	0.64	6710	2.1	0.9	4.8	29	1410	3300	80
560	400-1120	GR1	118-40M	GRT1	712	72	94.5	94.4	0.73	0.66	7515	2.1	0.9	4.8	34	1590	3520	80
630	400-1250	GR1	118-40L	GRT1	713	81	94.7	94.5	0.72	0.66	8443	2.1	0.9	4.9	38	1780	3790	80
710	400-1250	GR1	118-40L	GRT1	713	92	94.4	94.3	0.72	0.64	9515	2.1	0.9	5.0	41	1840	3900	80
800	450-1250	GR1	132-45M	GRT1	713	98	94.9	94.7	0.76	0.70	10721	2.0	0.8	4.8	56	2220	4390	80
900	450-1250	GR1	132-45M	GRT1	713	109	95.1	95.0	0.76	0.71	12061	1.9	0.8	4.7	60	2350	4540	80
1000	450-1250	GR1	132-45M	GRT1	714	123	95.3	95.1	0.75	0.69	13382	2.1	0.9	4.9	69	2640	4830	80
1120	450-1400	GR1	132-45L	GRT1	714	134	95.4	95.3	0.77	0.71	14988	2.0	0.8	4.8	77	2950	5180	80
1250	450-1400	GR1	132-45L	GRT1	714	151	95.5	95.3	0.76	0.70	16728	2.0	0.8	4.9	82	3010	5330	80
1400	500-1600	GR1	150-50M	GRT1	713	162	95.7	95.7	0.79	0.74	18761	2.0	0.7	4.8	110	2900	6120	80
1600	500-1600	GR1	150-50M	GRT1	713	183	95.9	95.8	0.80	0.75	21442	1.9	0.6	4.7	120	3140	6470	80
1800	500-1600	GR1	150-50M	GRT1	713	206	95.7	95.7	0.80	0.75	24122	1.9	0.7	4.8	140	3460	6830	80
2000	500-1800	GR1	150-50L	GRT1	714	228	96.0	95.9	0.80	0.75	26765	2.0	0.7	4.9	160	3960	7420	80
2250	500-1800	GR1	150-50L	GRT1	714	260	96.1	96.0	0.79	0.75	30110	2.0	0.7	4.9	160	3920	7600	80
2500	560-1800	GR1	170-56M	GRT1	712	278	96.2	96.3	0.82	0.79	33550	1.7	0.7	4.2	240	4780	8830	80
2800	560-1800	GR1	170-56M	GRT1	713	314	96.4	96.3	0.81	0.78	37523	1.9	0.7	4.6	260	5150	9270	80
3150	560-2000	GR1	170-56L	GRT1	713	349	96.4	96.4	0.82	0.79	42213	1.8	0.7	4.4	290	5450	9780	80
3550	560-2000	GR1	170-56L	GRT1	713	393	96.5	96.6	0.82	0.79	47574	1.8	0.7	4.4	310	5740	10210	80
4000	630-2240	GR3	190-63L	GRT1	714	436	96.8	96.8	0.83	0.81	53529	1.7	0.6	4.5	480	6440	11740	85
4500	630-2240	GR3	190-63L	GRT1	714	490	96.9	96.9	0.83	0.81	60220	1.7	0.6	4.6	520	7040	12320	85
12-pole																		
355	400-1120	GR1	118-40M	GRT1	592	47	93.7	93.6	0.71	0.65	5730	1.9	0.7	3.7	29	2380	3300	75
400	400-1120	GR1	118-40M	GRT1	592	53	93.4	93.4	0.72	0.66	6456	1.9	0.7	3.7	34	2650	3520	75
450	400-1250	GR1	118-40L	GRT1	592	59	93.5	93.6	0.72	0.67	7263	1.8	0.6	3.6	36	2770	3670	75
500	400-1250	GR1	118-40L	GRT1	592	65	93.8	93.9	0.72	0.67	8070	1.8	0.6	3.7	38	2920	3780	75
560	400-1250	GR1	118-40L	GRT1	592	73	93.8	93.9	0.72	0.66	9038	1.8	0.7	3.7	41	3020	3890	75
630	450-1250	GR1	132-45M	GRT1	592	80	94.2	94.2	0.74	0.68	10168	1.8	0.7	3.7	56	3290	4390	77
710	450-1250	GR1	132-45M	GRT1	592	89	94.5	94.4	0.74	0.69	11459	1.8	0.7	3.7	60	3500	4540	77
800	450-1250	GR1	132-45M	GRT1	592	102	94.6	94.6	0.73	0.68	12912	1.8	0.7	3.8	65	3600	4680	77
900	450-1400	GR1	132-45L	GRT1	592	113	94.9	94.9	0.74	0.69	14526	1.8	0.7	3.7	73	3990	5030	77
1000	450-1400	GR1	132-45L	GRT1	592	125	95.0	95.0	0.74	0.69	16140	1.8	0.7	3.8	82	4390	5320	77
1120	500-1600	GR1	150-50M	GRT1	593	141	95.2	94.9	0.73	0.66	18046	2.4	0.8	4.5	120	5900	6450	77
1250	500-1600	GR1	150-50M	GRT1	593	158	95.4	95.1	0.73	0.66	20141	2.4	0.8	4.5	140	6540	6800	77
1400	500-1800	GR1	150-50L	GRT1	593	179	95.4	95.1	0.72	0.65	22558	2.4	0.8	4.6	150	6970	7210	77
1600	500-1800	GR1	150-50L	GRT1	593	201	95.5	95.3	0.73	0.67	25781	2.3	0.8	4.5	160	7550	7570	77
1800	560-1800	GR1	170-56M	GRT1	592	221	95.1	94.9	0.75	0.69	29052	2.3	0.7	4.8	240	6870	8780	77
2000	560-1800	GR1	170-56M	GRT1	592	245	95.3	95.1	0.75	0.70	32280	2.3	0.7	4.8	260	7660	9210	77
2250	560-2000	GR1	170-56L	GRT1	592	272	95.4	95.2	0.76	0.70	36315	2.3	0.7	4.8	290	8200	9720	77
2500	560-2000	GR1	170-56L	GRT1	593	306	95.5	95.3	0.75	0.69	40282	2.3	0.7	4.9	310	8430	10150	77
2800	630-2000	GR3	190-63M	GRT1	594	336	96.2	96.2	0.76	0.72	45040	1.8	0.6	4.7	420	7860	10700	85
3150	630-2240	GR3	190-63L	GRT1	595	377	96.4	96.3	0.76	0.71	50585	1.9	0.6	4.9	480	8720	11690	85
3550	630-2240	GR3	190-63L	GRT1	595	424	96.4	96.4	0.76	0.72	57008	1.8	0.6	4.9	520	9140	12270	85

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm ²	External max. kgm ²		
11kV, 50Hz																		
2-pole																		
1120	450-1400	GR2A			2976	73	95.7	95.5	0.85	0.81	3596	2.4	0.7	5.6	14	160	4040	85
1250	450-1400	GR2A			2976	83	95.8	95.5	0.83	0.78	4013	2.6	0.8	5.8	14	160	4040	85
1400	500-1600	GR3A			2987	94	95.6	95.1	0.82	0.76	4478	2.5	0.7	5.7	24	210	5260	85
1600	500-1600	GR3A			2985	106	95.7	95.3	0.83	0.79	5122	2.2	0.6	5.1	24	200	5260	85
1800	500-1600	GR3A			2985	118	95.9	95.6	0.84	0.80	5762	2.2	0.6	5.3	27	210	5470	85
2000	500-1600	GR3A			2984	129	95.9	95.8	0.85	0.82	6404	2.0	0.6	4.9	27	200	5470	85
2250	500-1600	GR3A			2984	145	96.2	96.0	0.85	0.82	7205	2.1	0.6	5.2	29	210	5670	85
2500	500-1600	GR3A			2985	163	96.4	96.2	0.84	0.81	8002	2.3	0.7	5.7	32	210	5860	85
2800	560-1800	GR3A			2985	172	96.4	96.2	0.89	0.87	8963	2.1	0.6	5.6	59	190	7980	85
3150	560-1800	GR3A			2986	195	96.5	96.4	0.88	0.87	10080	2.1	0.6	5.7	59	190	7980	85
3550	560-1800	GR3A			2986	219	96.7	96.6	0.88	0.87	11360	2.1	0.6	5.8	64	190	8240	85
4000	560-1800	GR3A			2984	244	96.8	96.7	0.89	0.88	12808	1.9	0.6	5.4	68	200	8490	85
4500	560-1800	GR3A			2985	271	96.9	96.9	0.90	0.89	14404	2.0	0.6	5.6	77	200	9000	85
5000	560-1800	GR3A			2984	301	96.9	97.0	0.90	0.90	16010	1.8	0.6	5.3	82	180	9260	85
5600	630-2000	GR3A			2981	346	96.6	96.4	0.88	0.87	17950	2.0	0.6	5.2	120	250	10600	85
6000	630-2000	GR3A			2982	366	96.7	96.5	0.89	0.87	19225	2.0	0.6	5.4	130	260	10980	85
6300	630-2000	GR3A			2981	384	96.8	96.5	0.89	0.88	20193	1.9	0.6	5.2	130	250	10980	85
6500	630-2000	GR3A			2982	396	96.9	96.6	0.89	0.87	20827	2.1	0.7	5.6	140	240	11360	85
7100	630-2000	GR3A			2980	433	96.9	96.8	0.89	0.89	22765	1.9	0.6	5.1	150	250	11650	85
4-pole																		
800	450-1250	GR1A	132-45M	GRT1A	1492	52	94.8	94.7	0.86	0.84	5123	1.9	0.6	5.0	25	510	3900	85
900	450-1250	GR1A	132-45M	GRT1A	1492	59	94.7	94.6	0.86	0.83	5764	2.0	0.7	5.4	28	510	4050	85
1000	450-1400	GR1A	132-45L	GRT1A	1492	64	95.1	95.1	0.87	0.85	6404	2.0	0.7	5.4	32	550	4160	85
1120	450-1400	GR1A	132-45L	GRT1A	1493	73	95.3	95.3	0.85	0.82	7168	2.1	0.8	5.6	32	560	4160	85
1250	450-1400	GR1A	132-45L	GRT1A	1493	80	95.6	95.5	0.86	0.83	8000	2.1	0.8	5.7	35	590	4310	85
1400	450-1400	GR1A	132-45L	GRT1A	1493	90	95.8	95.7	0.86	0.83	8960	2.2	0.8	5.9	38	600	4460	85
1600	500-1600	GR1A			1489	102	96.0	95.8	0.86	0.83	10267	2.2	0.8	5.6	59	820	5320	85
1800	500-1600	GR1A			1490	115	96.2	96.0	0.86	0.83	11543	2.3	0.8	5.8	64	830	5510	85
2000	500-1800	GR1A			1489	126	96.0	96.0	0.87	0.85	12834	2.1	0.8	5.5	69	830	5640	85
2250	500-1800	GR1A			1490	141	96.4	96.3	0.87	0.85	14429	2.3	0.8	6.0	80	910	6010	85
2500	500-1800	GR1A			1489	155	96.4	96.4	0.88	0.86	16043	2.3	0.8	6.0	85	950	6200	85
2800	560-1800	GR3A			1488	172	96.4	96.3	0.89	0.88	17980	2.0	0.7	5.5	120	1280	7800	85
3150	560-1800	GR3A			1488	193	96.5	96.4	0.89	0.88	20227	2.0	0.6	5.4	130	1290	8040	85
3550	560-1800	GR3A			1488	215	96.6	96.6	0.90	0.89	22796	2.0	0.7	5.4	140	1340	8270	85
4000	560-2000	GR3A			1488	241	96.8	96.8	0.90	0.89	25685	2.1	0.7	5.7	160	1480	8660	85
4500	560-2000	GR3A			1487	269	96.8	96.9	0.91	0.91	28915	1.9	0.7	5.2	180	1470	9140	85
5000	630-2000	GR3A			1489	304	97.0	96.9	0.89	0.88	32085	2.1	0.6	5.7	260	1730	10680	85
5600	630-2240	GR3A			1489	341	97.1	97.0	0.89	0.88	35935	2.1	0.6	6.0	290	1750	11410	85
6000	630-2240	GR3A			1489	365	97.1	97.0	0.89	0.87	38502	2.2	0.7	6.3	310	1790	11730	85
6300	630-2240	GR3A			1489	383	97.1	97.1	0.89	0.88	40427	2.1	0.7	6.0	310	1760	11730	85
6500	630-2240	GR3A			1489	395	97.2	97.1	0.89	0.88	41711	2.2	0.7	6.3	340	1940	12430	85
7100	630-2240	GR3A			1488	431	97.2	97.2	0.89	0.89	45591	2.0	0.6	5.8	340	1880	12430	85

■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm ²	External max. kgm ²		
11kV, 50Hz																		
6-pole																		
560	450-1250	GR1	132-45M	GRT1	991	38	93.9	93.9	0.83	0.79	5399	1.9	0.7	4.5	32	970	3830	85
630	450-1250	GR1	132-45M	GRT1	991	42	94.4	94.5	0.84	0.81	6074	1.9	0.7	4.6	35	1120	3980	85
710	450-1250	GR1	132-45M	GRT1	992	47	94.7	94.8	0.84	0.81	6839	1.9	0.7	4.7	39	1180	4130	85
800	450-1250	GR1	132-45M	GRT1	992	53	95.1	95.1	0.84	0.80	7706	2.0	0.7	5.0	43	1280	4270	85
900	450-1400	GR1	132-45L	GRT1	993	61	95.3	95.2	0.82	0.77	8660	2.2	0.8	5.3	47	1360	4380	85
1000	450-1400	GR1	132-45L	GRT1	993	68	95.0	95.0	0.82	0.78	9622	2.1	0.8	5.3	51	1330	4530	85
1120	450-1400	GR1	132-45L	GRT1	993	76	95.3	95.3	0.82	0.78	10777	2.1	0.8	5.3	55	1430	4670	85
1250	500-1600	GR1	150-50M	GRT1	991	82	95.2	95.3	0.85	0.83	12052	2.0	0.9	5.2	77	1620	5750	85
1400	500-1600	GR1	150-50M	GRT1	991	90	95.3	95.5	0.86	0.83	13498	2.0	0.9	5.2	84	1670	5930	85
1600	500-1600	GR1	150-50M	GRT1	991	104	95.5	95.7	0.85	0.83	15427	1.9	0.9	5.1	90	1740	6110	85
1800	500-1600	GR1	150-50M	GRT1	990	114	95.8	95.9	0.87	0.85	17373	1.9	0.9	5.0	100	1910	6470	85
2000	500-1800	GR1	150-50L	GRT1	991	126	96.0	96.1	0.87	0.85	19283	1.9	0.9	5.2	120	2090	6740	85
2250	500-1800	GR1	150-50L	GRT1	991	142	96.1	96.2	0.87	0.85	21694	2.0	0.9	5.4	130	2150	7240	85
2500	560-1800	GR1			994	159	96.1	96.1	0.86	0.84	24032	2.2	0.7	5.4	170	2610	8160	85
2800	560-1800	GR1			993	174	96.2	96.3	0.88	0.86	26942	2.0	0.6	4.9	180	2660	8380	85
3150	560-2000	GR1			993	198	96.4	96.5	0.87	0.85	30310	2.2	0.7	5.4	210	2830	8700	85
3550	560-2000	GR1			993	220	96.5	96.6	0.88	0.86	34159	2.2	0.7	5.4	230	3050	9150	85
4000	630-2000	GR3			990	242	96.6	96.5	0.90	0.88	38606	2.1	0.7	5.9	330	2860	10600	85
4500	630-2240	GR3			989	266	96.6	96.5	0.92	0.90	43475	2.0	0.7	5.7	370	3080	10970	85
5000	630-2240	GR3			989	295	96.7	96.7	0.92	0.90	48306	2.0	0.7	5.7	390	3000	11660	85
5600	630-2240	GR3			989	331	96.8	96.8	0.92	0.91	54103	1.9	0.7	5.6	430	3270	12340	85
8-pole																		
450	450-1250	GR1	132-45M	GRT1	744	33	93.7	93.5	0.78	0.72	5779	2.2	0.8	4.5	40	2530	3960	80
500	450-1250	GR1	132-45M	GRT1	744	36	94.1	94.0	0.79	0.74	6421	2.2	0.8	4.5	44	2760	4100	80
560	450-1250	GR1	132-45M	GRT1	744	40	94.4	94.3	0.79	0.74	7192	2.2	0.8	4.6	49	2980	4250	80
630	450-1250	GR1	132-45M	GRT1	744	45	94.6	94.5	0.79	0.73	8091	2.3	0.8	4.7	53	3140	4390	80
710	450-1250	GR1	132-45M	GRT1	744	49	94.5	94.6	0.81	0.76	9118	2.0	0.7	4.3	53	2990	4390	80
800	450-1400	GR1	132-45L	GRT1	744	55	94.8	94.9	0.82	0.78	10274	2.0	0.7	4.3	62	3390	4640	80
900	450-1400	GR1	132-45L	GRT1	744	63	95.0	95.0	0.79	0.74	11558	2.2	0.8	4.6	66	3650	4780	80
1000	500-1600	GR1	150-50M	GRT1	744	71	94.9	94.8	0.79	0.74	12843	2.0	1.0	5.6	100	2880	6090	80
1120	500-1600	GR1	150-50M	GRT1	744	79	95.2	95.1	0.79	0.75	14384	2.0	1.0	5.5	110	2950	6270	80
1250	500-1600	GR1	150-50M	GRT1	744	85	95.3	95.3	0.81	0.77	16053	1.8	0.9	5.3	130	3260	6620	80
1400	500-1600	GR1	150-50M	GRT1	744	97	95.5	95.4	0.80	0.76	17980	1.9	1.0	5.4	130	3400	6790	80
1600	500-1800	GR1	150-50L	GRT1	743	109	95.7	95.7	0.81	0.77	20576	1.8	0.9	5.3	150	3750	7200	80
1800	500-1800	GR1	150-50L	GRT1	744	122	95.9	95.8	0.81	0.77	23117	1.8	1.0	5.3	160	4000	7550	80
2000	560-1800	GR1	170-56M	GRT1	745	131	96.0	95.8	0.84	0.79	25651	2.7	0.9	6.4	240	6220	8910	80
2250	560-1800	GR1	170-56M	GRT1	745	145	96.0	95.9	0.85	0.80	28857	2.5	0.8	6.1	260	6390	9120	80
2500	560-2000	GR1	170-56L	GRT1	745	161	96.1	96.0	0.85	0.81	32064	2.5	0.8	6.1	280	6800	9620	80
2800	560-2000	GR1	170-56L	GRT1	745	180	96.2	96.1	0.85	0.81	35911	2.5	0.9	6.2	310	7160	10050	80
3150	630-2000	GR3	190-63M	GRT1	740	200	96.2	96.1	0.86	0.84	40673	1.9	0.6	5.3	390	5090	10210	85
3550	630-2000	GR3	190-63M	GRT1	740	228	96.3	96.3	0.85	0.82	45838	1.9	0.6	5.3	410	5120	10490	85
4000	630-2240	GR3	190-63L	GRT1	741	253	96.6	96.6	0.86	0.83	51579	2.1	0.7	5.8	490	6130	11830	85
4500	630-2240	GR3	190-63L	GRT1	740	282	96.6	96.6	0.87	0.85	58104	1.9	0.6	5.3	510	5990	12010	85

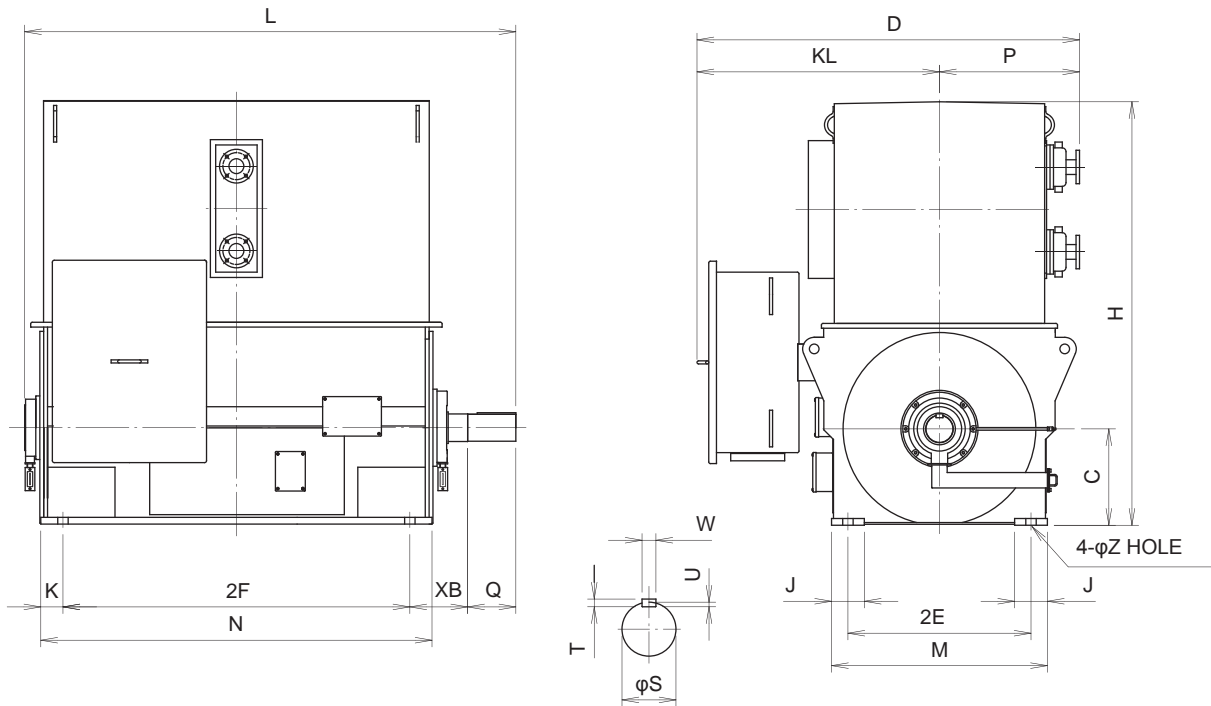
■ Selection and ordering data

Rated power kW	Horizontal		Vertical		Speed rpm	Rated current I_{rated} A	Efficiency		Power factor		Torque T_{rated} Nm	Break-down torque T_B/T_{rated}	Locked-rotor torque T_{LR}/T_{rated}	Locked-rotor current I_{LR}/I_{rated}	Moment of inertia		Weight kg	Sound pressure level at no-load dB(A)
	Frame No.	Drawing No.	Frame No.	Drawing No.			4/4 load %	3/4 load %	4/4 load cos φ	3/4 load cos φ					Motor kgm ²	External max. kgm ²		
11kV, 50Hz																		
10-pole																		
450	450-1400	GR1	132-45L	GRT1	596	39	93.3	92.6	0.66	0.57	7214	3.0	1.2	6.0	60	3650	4430	80
500	450-1400	GR1	132-45L	GRT1	595	41	93.4	92.9	0.69	0.61	8029	2.7	1.1	5.7	60	3730	4430	80
560	450-1400	GR1	132-45L	GRT1	595	44	93.5	93.2	0.72	0.64	8993	2.4	1.0	5.3	60	3390	4430	80
630	450-1400	GR1	132-45L	GRT1	595	50	93.6	93.4	0.72	0.65	10117	2.3	1.0	5.3	65	3710	4570	80
710	500-1600	GR1	150-50M	GRT1	595	52	94.5	94.3	0.76	0.69	11402	2.4	0.8	5.5	93	3950	5960	80
800	500-1600	GR1	150-50M	GRT1	594	58	94.4	94.4	0.78	0.72	12869	2.1	0.8	5.0	93	3760	5960	80
900	500-1600	GR1	150-50M	GRT1	593	64	94.3	94.5	0.79	0.75	14502	1.9	0.7	4.6	93	3650	5960	80
1000	500-1600	GR1	150-50M	GRT1	594	72	94.7	94.8	0.78	0.73	16086	2.0	0.7	4.9	110	4150	6080	80
1120	500-1600	GR1	150-50M	GRT1	594	80	94.9	94.9	0.78	0.73	18016	2.0	0.7	4.9	110	4270	6250	80
1250	500-1600	GR1	150-50M	GRT1	594	88	95.1	95.2	0.79	0.74	20107	2.0	0.7	4.9	130	4770	6610	80
1400	500-1800	GR1	150-50L	GRT1	594	98	95.3	95.3	0.79	0.74	22520	2.0	0.7	4.9	140	5200	7010	80
1600	500-1800	GR1	150-50L	GRT1	594	112	95.4	95.4	0.79	0.74	25737	2.0	0.7	5.0	160	5540	7370	80
1800	560-1800	GR1	170-56M	GRT1	594	124	95.9	95.8	0.80	0.75	28954	2.2	0.9	5.2	250	7510	8940	80
2000	560-2000	GR1	170-56L	GRT1	594	139	95.8	95.7	0.79	0.75	32172	2.3	0.9	5.3	290	8310	9610	80
2250	560-2000	GR1	170-56L	GRT1	594	157	95.8	95.8	0.79	0.75	36193	2.2	0.9	5.3	300	8330	9810	80
2500	630-2000	GR3	190-63M	GRT1	596	173	96.3	96.3	0.79	0.75	40079	2.2	0.9	5.7	400	8420	10390	85
2800	630-2240	GR3	190-63L	GRT1	596	193	96.5	96.4	0.79	0.74	44889	2.3	0.9	5.9	460	9570	11330	85
3150	630-2240	GR3	190-63L	GRT1	596	214	96.6	96.6	0.80	0.75	50500	2.2	0.9	5.9	500	10140	11900	85
12-pole																		
400	450-1400	GR1	132-45L	GRT1	493	32	92.5	92.6	0.73	0.67	7752	1.9	0.7	3.7	56	4720	4300	77
450	450-1400	GR1	132-45L	GRT1	493	35	92.5	92.7	0.73	0.68	8722	1.9	0.7	3.7	60	4890	4440	77
500	450-1400	GR1	132-45L	GRT1	493	39	93.0	93.1	0.73	0.67	9691	1.9	0.7	3.8	65	5360	4590	77
560	500-1600	GR1	150-50M	GRT1	494	46	93.3	92.9	0.70	0.62	10832	2.7	0.9	4.7	100	7380	5860	77
630	500-1600	GR1	150-50M	GRT1	494	50	93.6	93.2	0.71	0.63	12185	2.6	0.9	4.7	110	7740	6040	77
710	500-1600	GR1	150-50M	GRT1	494	56	93.8	93.4	0.71	0.63	13733	2.6	0.9	4.7	110	8090	6210	77
800	500-1600	GR1	150-50M	GRT1	494	63	94.0	93.7	0.72	0.65	15474	2.5	0.8	4.6	130	8860	6560	77
900	500-1800	GR1	150-50L	GRT1	494	70	94.3	94.0	0.72	0.65	17408	2.5	0.8	4.6	140	9800	6970	77
1000	500-1800	GR1	150-50L	GRT1	494	79	94.4	94.1	0.71	0.64	19342	2.6	0.9	4.8	160	10550	7320	77
1120	560-1800	GR1	170-56M	GRT1	494	89	94.0	93.7	0.71	0.64	21663	2.8	0.9	5.5	250	10670	8930	77
1250	560-2000	GR1	170-56L	GRT1	494	96	94.2	93.9	0.73	0.66	24177	2.7	0.8	5.3	270	11490	9430	77
1400	560-2000	GR1	170-56L	GRT1	494	105	94.6	94.3	0.74	0.67	27079	2.6	0.8	5.2	300	12480	9860	77
1600	630-2000	GR3	190-63M	GRT1	495	123	95.6	95.4	0.72	0.66	30885	2.2	0.8	5.4	350	10480	10290	85
1800	630-2000	GR3	190-63M	GRT1	496	140	95.6	95.4	0.71	0.64	34675	2.3	0.9	5.6	400	11340	10290	85
2000	630-2240	GR3	190-63L	GRT1	496	151	95.7	95.5	0.73	0.66	38528	2.2	0.8	5.5	440	12240	11030	85
2250	630-2240	GR3	190-63L	GRT1	496	172	95.8	95.7	0.72	0.66	43344	2.2	0.8	5.5	460	12510	11220	85
2500	630-2240	GR3	190-63L	GRT1	496	191	95.9	95.8	0.72	0.66	48160	2.2	0.8	5.5	500	13250	11790	85

■ Dimension drawings

Antifriction bearings

Drawing No.: GR1



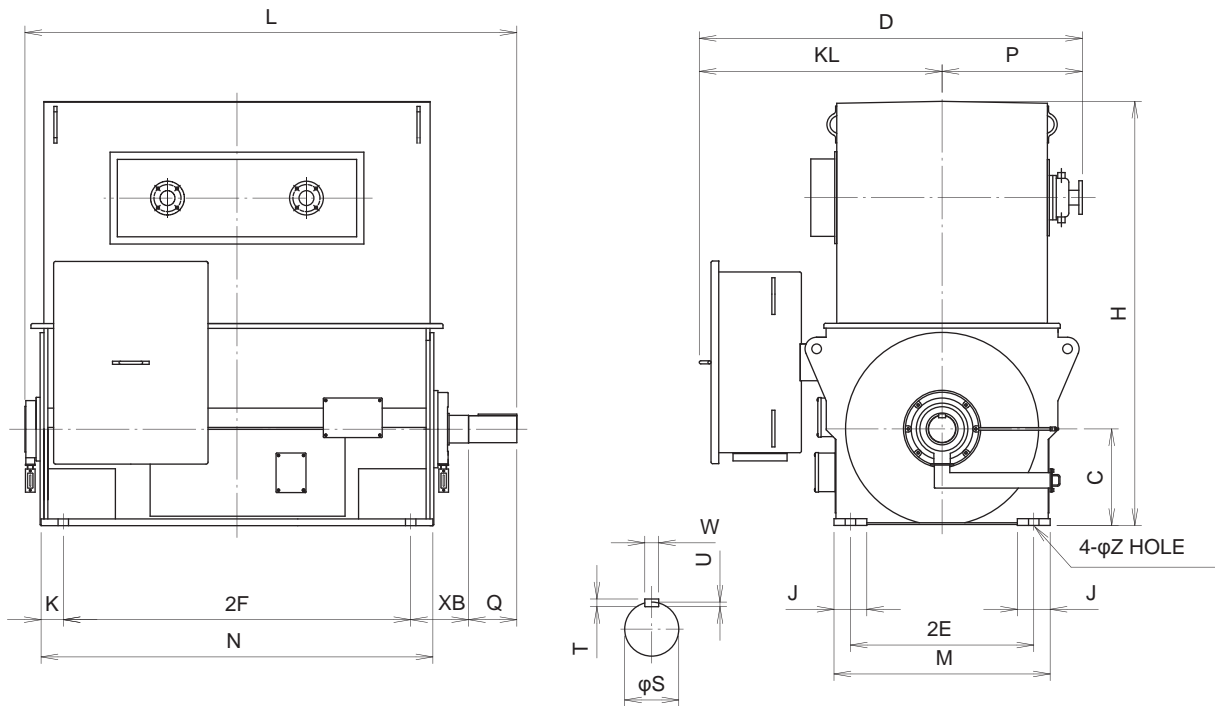
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Frame	Dimensions														Shaft end		Key size		
	C	D	2E	2F	H	J	K	L	M	N	P	Z	XB	KL	Q	S	T	U	W
Frame No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6-pole																			
400-1120	400	1850	800	1120	1720	170	160	1950	920	1440	640	42	310	1210	250	110	16	10	28
400-1250	400	1850	800	1250	1720	170	160	2080	920	1570	640	42	310	1210	250	110	16	10	28
450-1250	450	1950	900	1250	1920	170	205	2170	1020	1660	690	54	355	1260	250	140	20	12	36
450-1400	450	1950	900	1400	1920	170	205	2320	1020	1810	690	54	355	1260	250	140	20	12	36
500-1600	500	2050	1000	1600	2120	170	125	2410	1120	1850	740	60	280	1310	300	170	22	13	40
500-1800	500	2050	1000	1800	2120	170	125	2610	1120	2050	740	60	280	1310	300	170	22	13	40
560-1800	560	2170	1120	1800	2300	215	160	2750	1240	2120	800	68	320	1370	350	190	25	15	45
560-2000	560	2170	1120	2000	2300	215	160	2950	1240	2320	800	68	320	1370	350	190	25	15	45
8-pole and above																			
400-1120	400	1850	800	1120	1720	170	160	1950	920	1440	640	42	310	1210	250	120	18	11	32
400-1250	400	1850	800	1250	1720	170	160	2080	920	1570	640	42	310	1210	250	120	18	11	32
450-1250	450	1950	900	1250	1920	170	205	2170	1020	1660	690	54	355	1260	250	140	20	12	36
450-1400	450	1950	900	1400	1920	170	205	2320	1020	1810	690	54	355	1260	250	140	20	12	36
500-1600	500	2050	1000	1600	2120	170	125	2420	1120	1850	740	60	280	1310	300	170	22	13	40
500-1800	500	2050	1000	1800	2120	170	125	2620	1120	2050	740	60	280	1310	300	170	22	13	40
560-1800	560	2170	1120	1800	2300	215	160	2750	1240	2120	800	68	320	1370	350	190	25	15	45
560-2000	560	2170	1120	2000	2300	215	160	2950	1240	2320	800	68	320	1370	350	190	25	15	45

■ Dimension drawings

Antifriction bearings

Drawing No.: GR1A



Frame	Dimensions														Shaft end		Key size		
	C	D	2E	2F	H	J	K	L	M	N	P	Z	XB	KL	Q	S	T	U	W
Frame No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4-pole																			
400-1120	400	1850	800	1120	1700	170	160	1950	920	1440	640	42	310	1210	250	110	16	10	28
400-1250	400	1850	800	1250	1700	170	160	2080	920	1570	640	42	310	1210	250	110	16	10	28
450-1250	450	1950	900	1250	1950	170	205	2170	1020	1660	690	54	355	1260	250	120	18	11	32
450-1400	450	1950	900	1400	1950	170	205	2320	1020	1810	690	54	355	1260	250	120	18	11	32
500-1600	500	2050	1000	1600	2200	170	125	2420	1120	1850	740	60	280	1310	300	140	20	12	36
500-1800	500	2050	1000	1800	2200	170	125	2620	1120	2050	740	60	280	1310	300	140	20	12	36

Technical Data

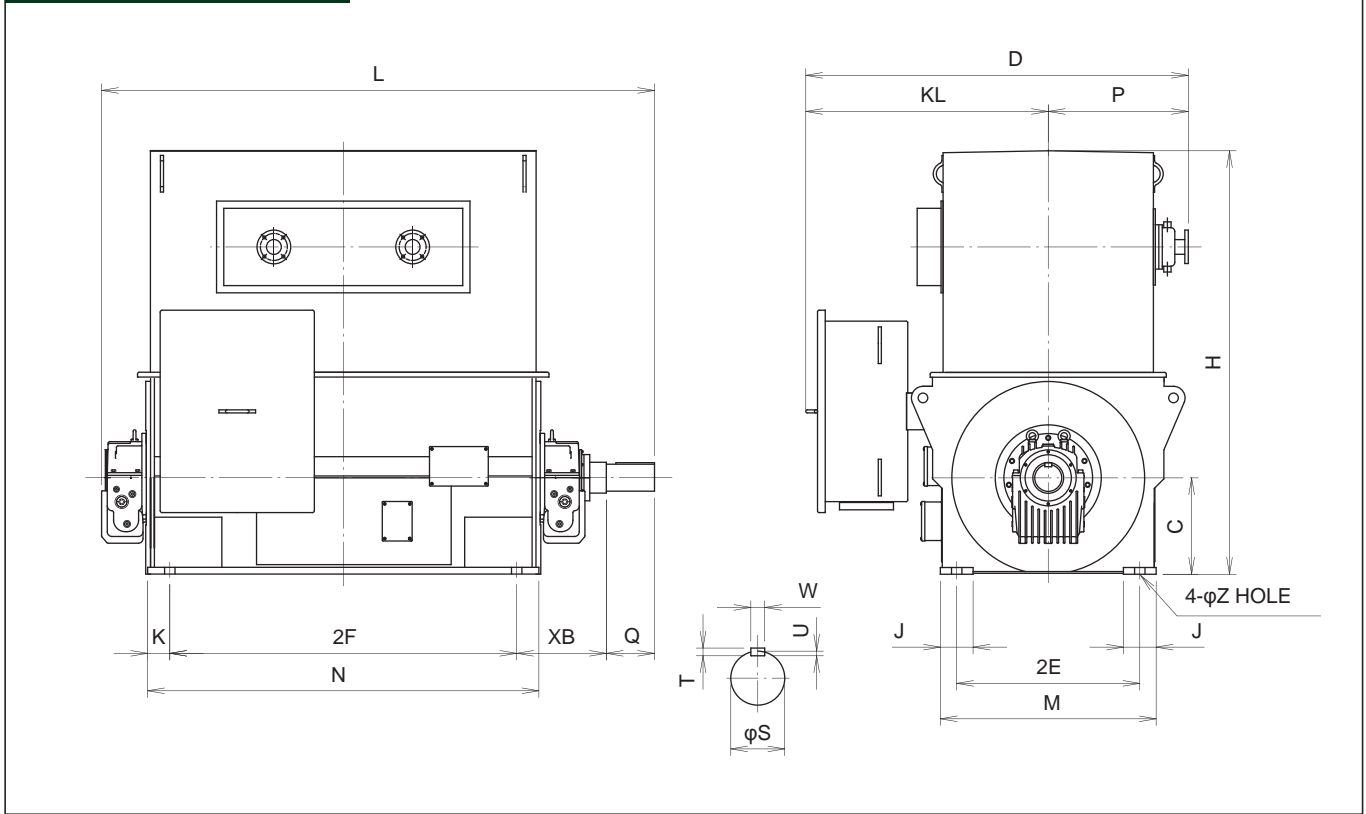
IC81W (TEWAC – Totally Enclosed Water-to-Air-Cooled)

Water-cooled motors

Dimension drawings

Self-cooled sleeve bearings

Drawing No.: GR2A



3

Frame	Dimensions															Shaft end		Key size		
	C	D	2E	2F	H	J	K	L	M	N	P	Z	XB	KL	Q	S	T	U	W	
Frame No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
2-pole																				
400-1120	400	1850	800	1120	1800	170	290	2040	920	1570	640	42	420	1210	170	85	14	9	22	
450-1400	450	1950	900	1400	2100	170	205	2270	1020	1810	690	54	465	1260	210	90	14	9	25	

Technical Data

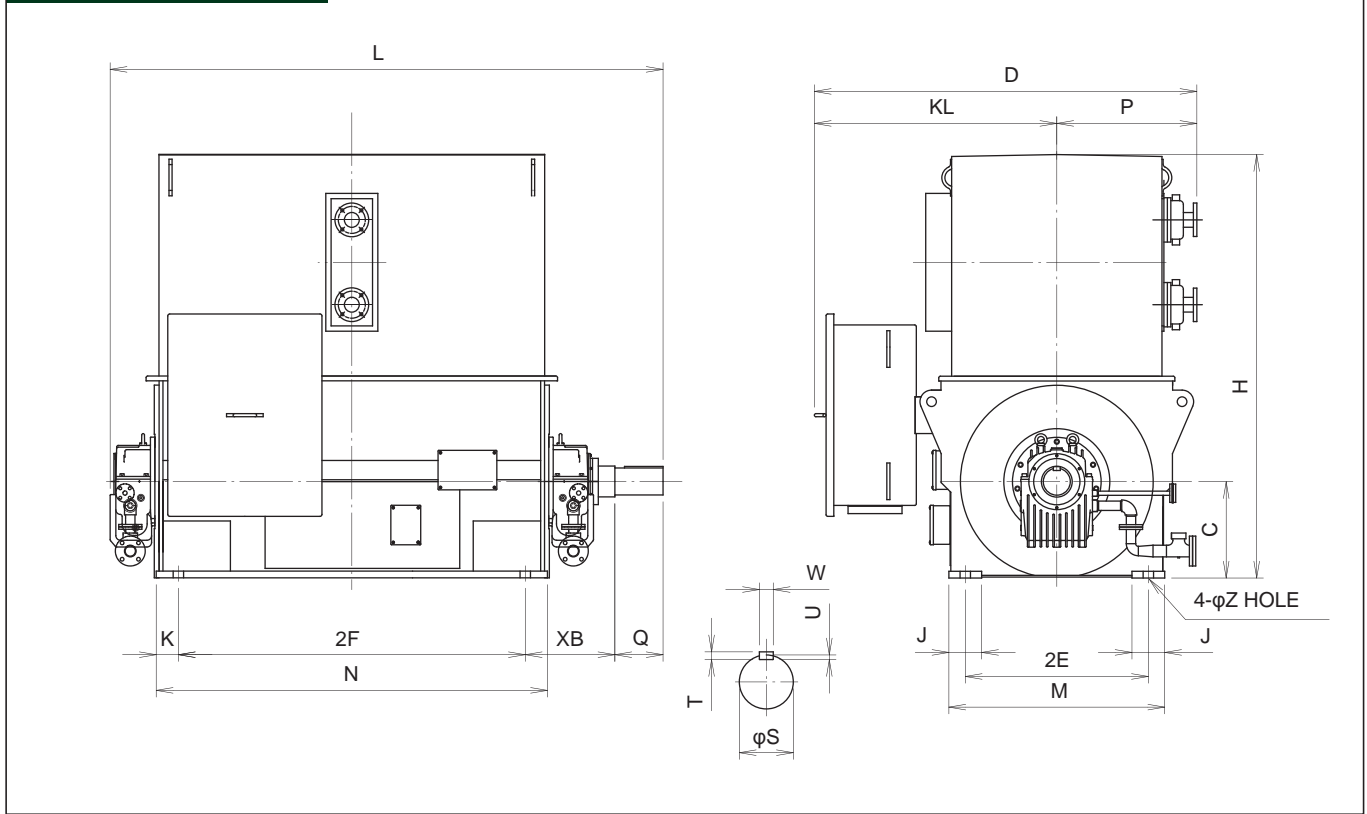
IC81W (TEWAC – Totally Enclosed Water-to-Air-Cooled)

Water-cooled motors

Dimension drawings

Forced feed oil lubricated sleeve bearings

Drawing No.: GR3



Frame	Dimensions													Shaft end		Key size			
	C	D	2E	2F	H	J	K	L	M	N	P	Z	XB	KL	Q	S	T	U	W
Frame No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6-pole																			
630-2000	630	2320	1260	2000	2390	230	110	3420	1380	2220	870	66	580	1450	350	210	28	17	50
630-2240	630	2320	1260	2240	2390	230	110	3660	1380	2460	870	66	580	1450	350	210	28	17	50
8-pole and above																			
630-2000	630	2320	1260	2000	2390	230	110	3420	1380	2220	870	66	580	1450	350	210	28	17	50
630-2240	630	2320	1260	2240	2390	230	110	3660	1380	2460	870	66	580	1450	350	210	28	17	50

3

Technical Data

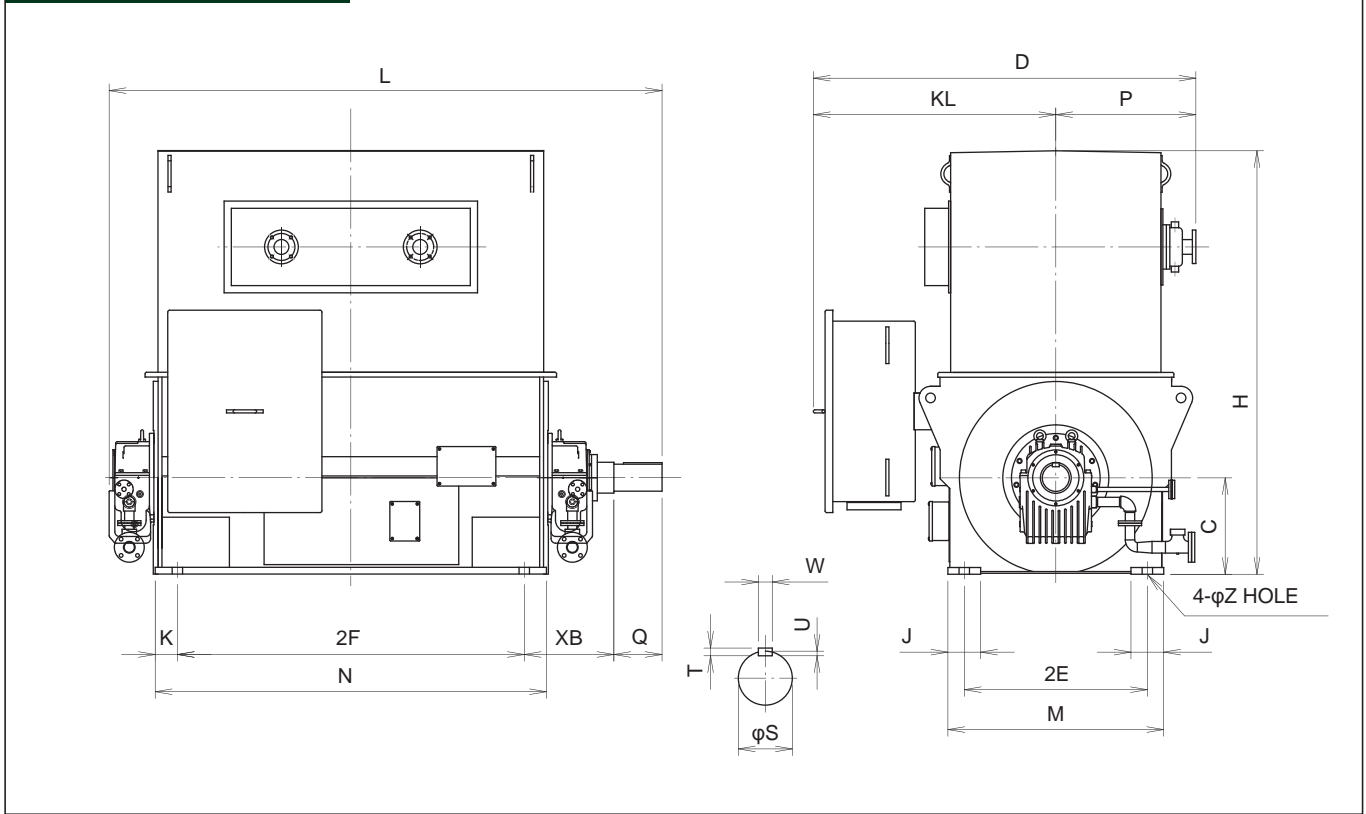
IC81W (TEWAC – Totally Enclosed Water-to-Air-Cooled)

Water-cooled motors

Dimension drawings

Forced feed oil lubricated sleeve bearings

Drawing No.: GR3A



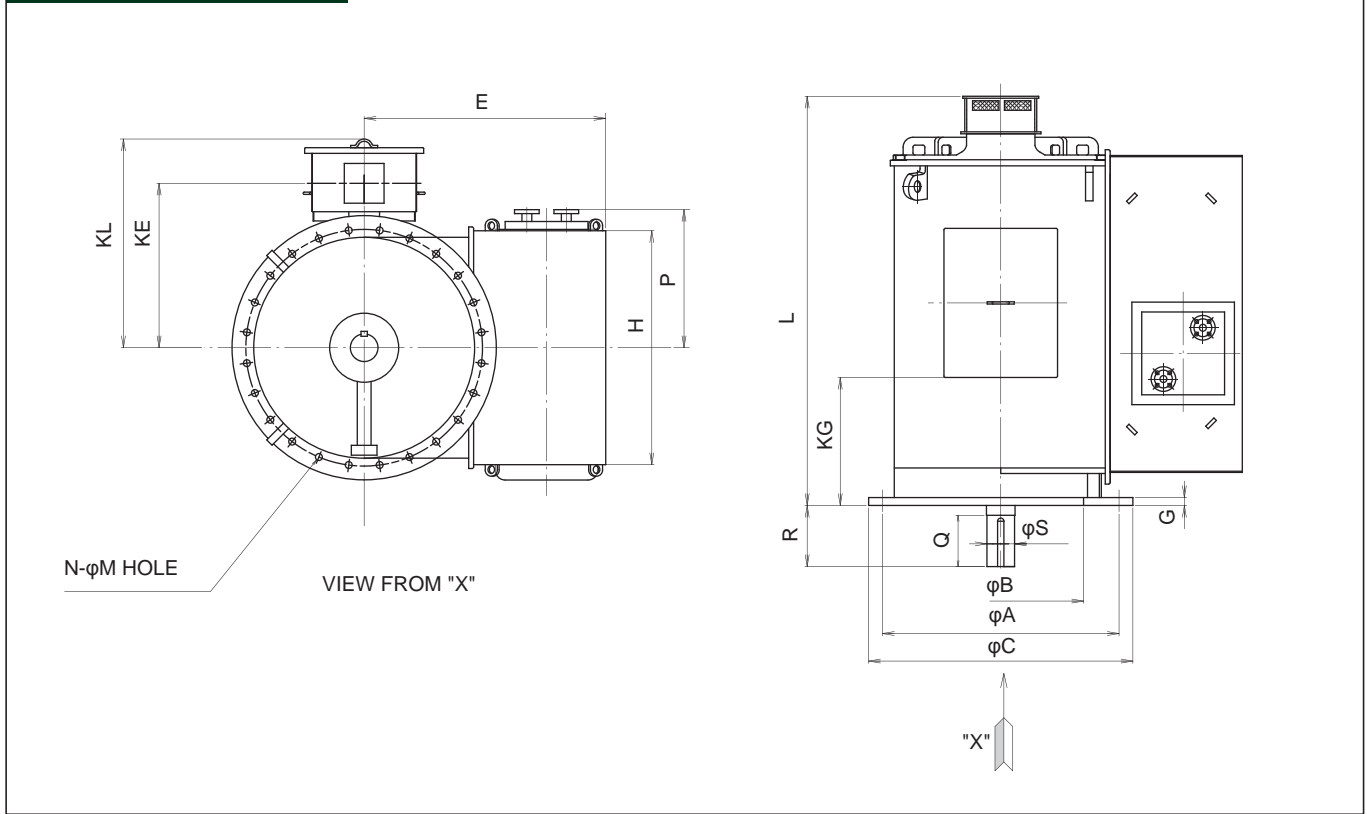
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Frame	Dimensions														Shaft end		Key size			
	C	D	2E	2F	H	J	K	L	M	N	P	Z	XB	KL	Q	S	T	U	W	
Frame No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
2-pole																				
500-1600	500	2050	1000	1600	2200	170	325	2730	1120	2050	740	60	400	1310	250	105	16	10	28	
560-1800	560	2170	1120	1800	2320	215	360	3020	1240	2320	800	68	435	1370	250	125	18	11	32	
630-2000	630	2320	1260	2000	2350	230	110	3170	1380	2460	870	66	400	1450	250	140	20	12	36	
4-pole																				
560-1800	560	2170	1120	1800	2320	215	160	3160	1240	2120	800	68	565	1370	350	170	22	13	40	
560-2000	560	2170	1120	2000	2320	215	160	3360	1240	2320	800	68	565	1370	350	170	22	13	40	
630-2000	630	2320	1260	2000	2390	230	110	3250	1380	2220	870	66	500	1450	350	210	28	17	50	
630-2240	630	2320	1260	2240	2350	230	110	3490	1380	2460	870	66	500	1450	350	210	28	17	50	

Dimension drawings

Antifriction bearings

Drawing No.: GRT1



Frame	Dimensions													Shaft end		
	A	B	C	E	G	H	KE	KG	L	M	N	KL	P	Q	R	S
Frame No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6-pole																
118-40M	1180	720	1250	1320	35	1310	970	800	1910	28	8	1280	640	250	300	110
118-40L	1180	720	1250	1320	35	1310	970	920	2040	28	8	1280	640	250	300	110
132-45M	1320	830	1400	1470	35	1410	1020	910	2130	28	16	1330	690	250	300	140
132-45L	1320	830	1400	1470	35	1410	1020	1070	2290	28	16	1330	690	250	300	140
150-50M	1500	940	1600	1620	40	1510	1070	1100	2320	28	24	1380	740	300	350	170
150-50L	1500	940	1600	1620	40	1510	1070	1300	2520	28	24	1380	740	300	350	170
8-pole and above																
118-40M	1180	720	1250	1320	35	1310	970	800	1910	28	8	1280	640	250	300	120
118-40L	1180	720	1250	1320	35	1310	970	920	2040	28	8	1280	640	250	300	120
132-45M	1320	830	1400	1470	35	1410	1020	900	2130	28	16	1330	690	250	300	140
132-45L	1320	830	1400	1470	35	1410	1020	1060	2290	28	16	1330	690	250	300	140
150-50M	1500	940	1600	1620	40	1510	1070	1100	2320	28	24	1380	740	300	350	170
150-50L	1500	940	1600	1620	40	1510	1070	1300	2520	28	24	1380	740	300	350	170
170-56M	1500	940	1600	1620	40	1630	1130	1270	2600	28	24	1440	800	300	350	170
170-56L	1700	1060	1800	1740	45	1630	1130	1470	2800	28	24	1440	800	350	400	190
190-63M	1900	1200	2000	1760	45	1830	1230	1370	2770	35	24	1540	870	350	400	210
190-63L	1900	1200	2000	1760	45	1830	1230	1610	3010	35	24	1540	870	350	400	210

Technical Data

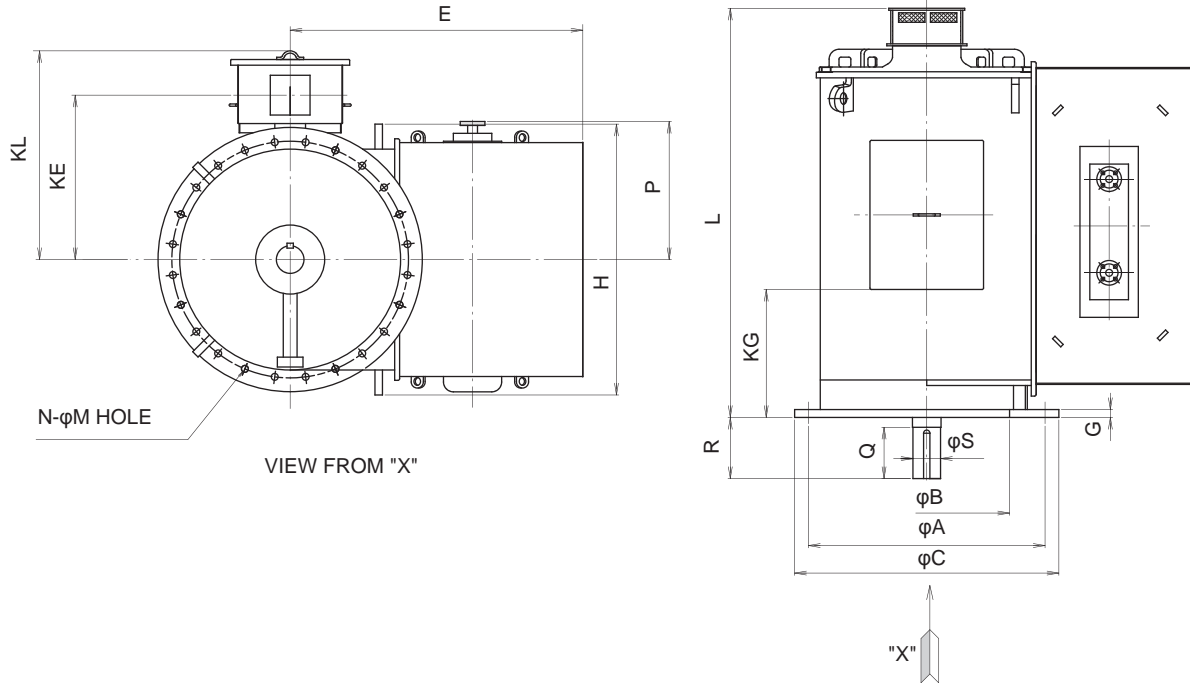
IC81W (TEWAC – Totally Enclosed Water-to-Air-Cooled)

Water-cooled motors

■ Dimension drawings

Antifriction bearings

Drawing No.: GRT1A



3

Frame	Dimensions													Shaft end		
	A	B	C	E	G	H	KE	KG	L	M	N	KL	P	Q	R	S
Frame No.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4-pole																
118-40M	1180	720	1250	1290	35	1310	970	900	1910	28	8	1280	640	250	300	110
118-40L	1180	720	1250	1290	35	1310	970	1020	2040	28	8	1280	640	250	300	110
132-45M	1320	830	1400	1340	35	1410	1020	1010	2130	28	16	1330	690	250	300	120
132-45L	1320	830	1400	1340	35	1410	1020	1170	2290	28	16	1330	690	250	300	120

Contents

Hazardous Area Motors

General 94

Type of Protection Exn 95

IC411 (TEFC) Totally Enclosed Fan-Cooled 95

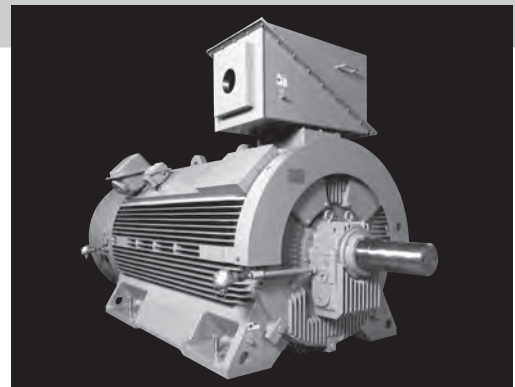
IC611 (TEAAC) Totally Enclosed Air-to-Air-Cooled 96

IC81W (TEWAC) Totally Enclosed Water-to-Air-Cooled 97

Type of Protection Exe 98

IC611 (TEAAC) Totally Enclosed Air-to-Air-Cooled 98

IC81W (TEWAC) Totally Enclosed Water-to-Air-Cooled 99



Hazardous Area Motors

General

To ensure maximum safety, most countries have passed legislation and implemented regulations and laws based on national and international standards. TMEIC motors are certified for operation in hazardous areas in most regions around the world.

Global Protection and Certification

	Standard	Certification Body
Europe	EN & ATEX	Baseefa
Russia	IEC or GOST	Nanio CCVE
China	GB	CQST or NEPST
Korea	IEC	KOSHA or KGS
Australia	IEC	Baseefa
India	IEC or EN & ATEX	CCOE
USA	NEC & ISA	FM
Canada	CSA	CSA
Brazil	ABNT & IEC	CEPEL or NCC
Others	IEC or EN & ATEX	Baseefa

Hazardous area motors are categorized according to the zone, type of protection and frame size. The table above shows the certifications that TMEIC has received from various authoritative bodies, in many cases the certifications apply to both constant and variable-speed motors.

Classification of Hazardous Area





Zone definition according to EN 60079-10-1/IEC 60079-10-1 and EN 60079-10-2/IEC 60079-10-2

Zone 0	Area in which an explosive gas atmosphere is present continuously or for long periods or frequently
Zone 1	Area in which an explosive gas atmosphere is likely to occur in normal operation occasionally
Zone 2	Area in which an explosive gas atmosphere is not likely to occur in normal operation but, if it does occur, will persist for a short period only
Zone 22	Area in which an explosive atmosphere in the form of a cloud of combustible dust in air is not likely to occur in normal operation but, if it does occur, will persist for a short period only

Potentially explosive atmospheres are divided into zones based on the chronological and geographical probability of the presence of a hazard. Information and specifications regarding zone subdivision for gas atmospheres can be found in EN 60079-10-1/IEC 60079-10-1, and that for potentially explosive dust atmospheres can be found in EN 60079-10-2/IEC 60079-10-2. Further, a distinction is made between various explosion groups and temperature classes, and these are included in the hazard assessment.

Types of Explosion-protected Machines

Type of protection and prevention

Exn		Non-sparking in accordance with EN 60079-15/IEC 60079-15 Machines not capable of igniting a surrounding explosive atmosphere during normal operation. Applicable zones: Zone 2
Exe		Increased safety in accordance with EN 60079-7/IEC 60079-7 Machines that do not emit dangerous sparks or temperatures when starting or during normal operation. Special additional safety measures are taken. Applicable zones: Zone 1 and 2
Exp		Pressurized in accordance with EN 60079-2/IEC 60079-2 Explosive gases that may result in fire are prevented from permeating inside the machine. Applicable zones: Zone 1 and 2
Exd		Flameproof enclosure in accordance with EN 60079-1/IEC 60079-1 Machines constructed to contain an internal explosion and prevent the transmission of flame to the external atmosphere. Operating temperature is such that it cannot ignite any surrounding gases. Applicable zones: Zone 1 and 2
Extc		Enclosure in accordance with EN 60079-31/IEC 60079-31 Machines enclosed for the purpose of protecting electrical equipment. The surface temperature is limited to enable use in areas where combustible dust may be present in concentrated levels that could cause a fire or explosion. Applicable zones: Zone 22

Depending on the zone and associated hazard, operating equipment must comply with defined minimum protection requirements. The various types of protection require that motors be subjected to appropriate measures that will prevent them from igniting the surrounding potentially explosive atmosphere.

Hazardous Area Motors

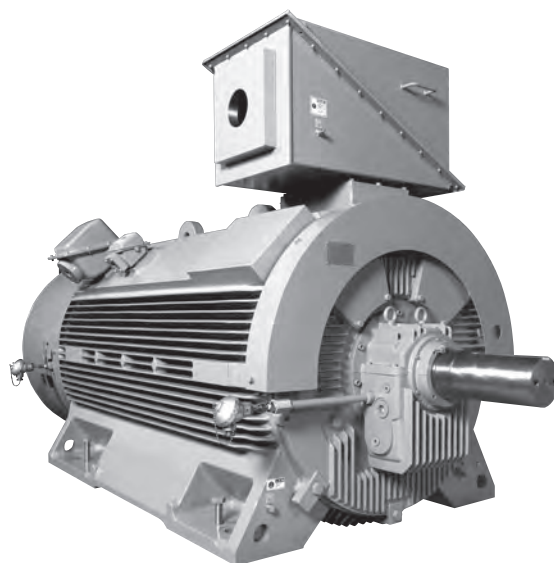
Type of Protection Exn

IC411 (TEFC – Totally Enclosed Fan-Cooled)

Air-cooled motors

■ Technical data

IC411 (TEFC), Exn	
Rated voltage	up to 6.6kV
Rated frequency	50/60Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3/IM V1
Degree of protection	IP55
Type of protection	Exn
Hazardous area classification	Zone 2
Cooling method	IC411/IC416
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height	315 to 560mm
Bearings	Antifriction
Cage material	Aluminum/Copper
Frame material	Cast iron
Standards	IEC, EN, JEC



Hazardous Area Motors

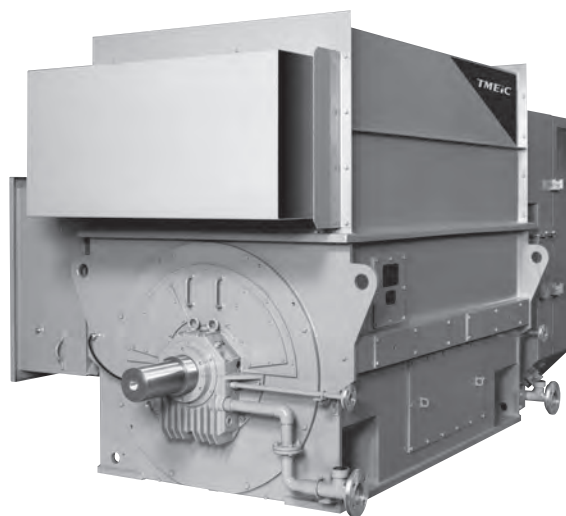
Type of Protection Exn

IC611 (TEAAC – Totally Enclosed Air-to-Air-Cooled)

Air-cooled motors

■ Technical data

IC611 (TEAAC), Exn	
Rated voltage	up to 11kV
Rated frequency	50/60Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3/IM V1
Degree of protection	IP55
Type of protection	Exn
Hazardous area classification	Zone 2
Cooling method	IC611
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height	400 to 630mm
Bearings	Antifriction/Sleeve
Cage material	Copper
Frame material for shaft height 400 to 630mm	Frame: Steel Top cover: Steel
Tube material for air cooler	Aluminum/Stainless as option
Standards	IEC, EN, JEC



These Exn measures do not affect the performance data or main dimensions of the TMEIC standard non-hazardous area motors in this catalog. Therefore the data of the non-hazardous area motors from Chapter 3 can also be used for these Exn motors.

Hazardous Area Motors

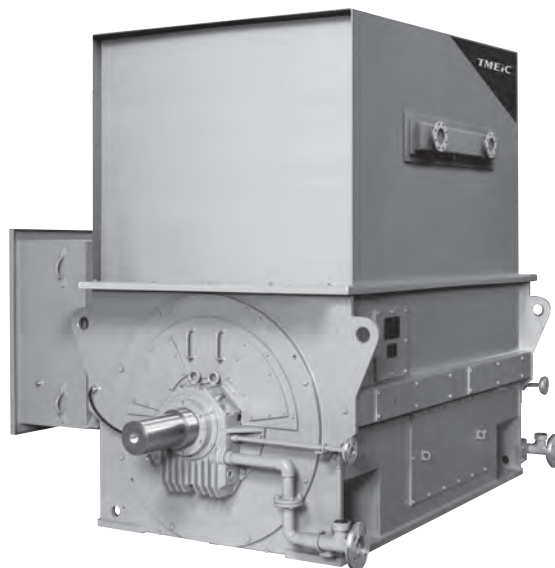
Type of Protection Exn

IC81W (TEWAC – Totally Enclosed Water-to-Air-Cooled)

Water-cooled motors

■ Technical data

IC81W (TEWAC), Exn	
Rated voltage	up to 11kV
Rated frequency	50/60Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3/IM V1
Degree of protection	IP55
Type of protection	Exn
Hazardous area classification	Zone 2
Cooling method	IC81W
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height	400 to 630mm
Bearings	Antifriction/Sleeve
Cage material	Copper
Frame material for shaft height 400 to 630mm	Frame: Steel Top cover: Steel
Tube material for air cooler	Deoxidized copper
Standards	IEC, EN, JEC



These Exn measures do not affect the performance data or main dimensions of the TMEIC standard non-hazardous area motors in this catalog. Therefore the data of the non-hazardous area motors from Chapter 3 can also be used for these Exn motors.

Hazardous Area Motors

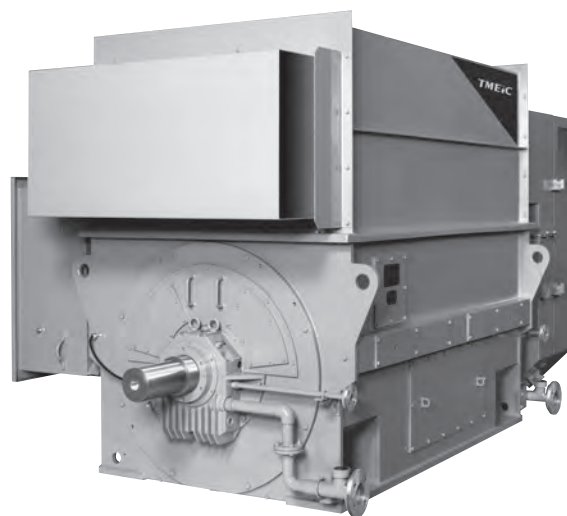
Type of Protection Exe

IC611 (TEAAC – Totally Enclosed Air-to-Air-Cooled)

Air-cooled motors

■ Technical data

IC611 (TEAAC), Exe	
Rated voltage	up to 11kV
Rated frequency	50/60Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3/IM V1
Degree of protection	IP55
Type of protection	Exe
Hazardous area classification	Zone 1, 2
Cooling method	IC611
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height	400 to 630mm
Bearings	Antifriction/Sleeve
Cage material	Copper
Frame material for shaft height 400 to 630mm	Frame: Steel Top cover: Steel
Tube material for air cooler	Aluminum/Stainless as option
Standards	IEC, EN, JEC



Hazardous Area Motors

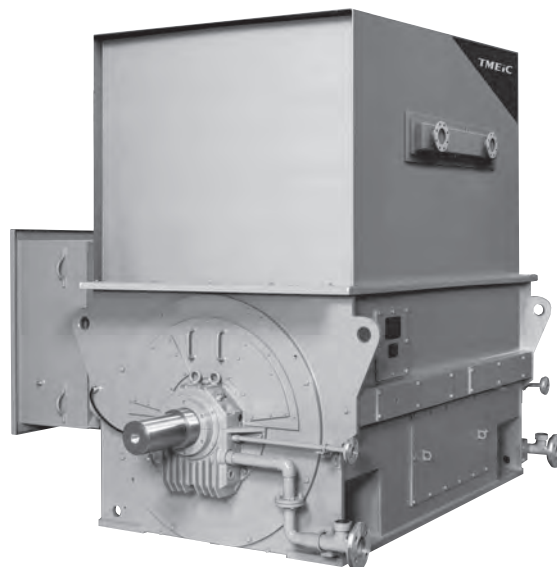
Type of Protection Exe

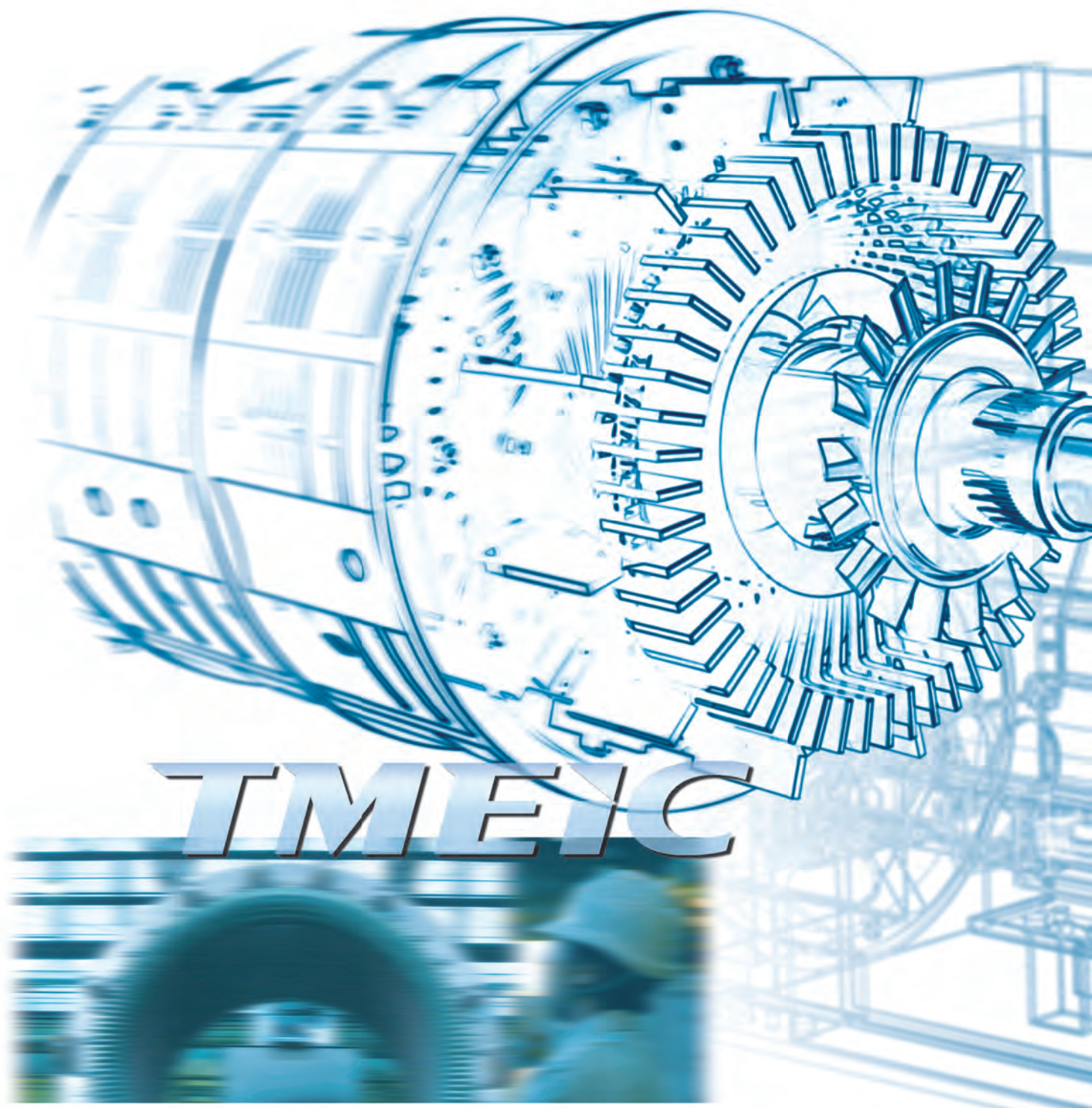
IC81W (TEWAC – Totally Enclosed Water-to-Air-Cooled)

Water-cooled motors

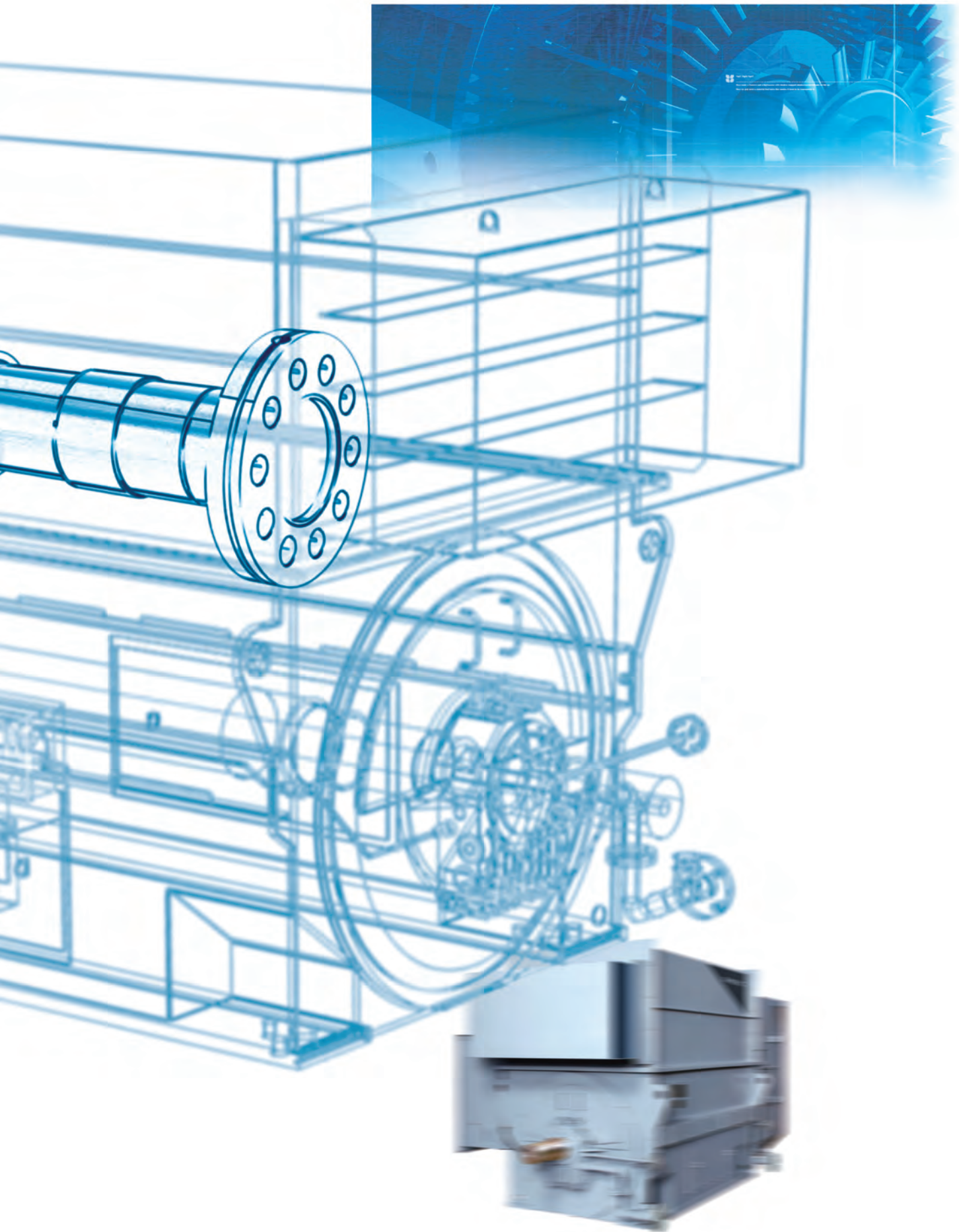
■ Technical data

IC81W (TEWAC), Exe	
Rated voltage	up to 11kV
Rated frequency	50/60Hz
Motor type	Induction motor with squirrel-cage rotor
Type of construction	IM B3/IM V1
Degree of protection	IP55
Type of protection	Exe
Hazardous area classification	Zone 1, 2
Cooling method	IC81W
Stator winding insulation	Thermal class 155 (F), utilized to 130 (B)
Shaft height	400 to 630mm
Bearings	Antifriction/Sleeve
Cage material	Copper
Frame material for shaft height 400 to 630mm	Frame: Steel Top cover: Steel
Tube material for air cooler	Deoxidized copper
Standards	IEC, EN, JEC





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