Y (YKK, YKS) 450~630 Series 10KV High-voltage Three-phase Asynchronous Motors

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Ordering Instructions

Dear Customers,

When placing an order, please note the following in addition to providing the basic parameters of your selected motor. Please carefully read the following items to make sure that your demands are responded most satisfactorily and quickly. If no special requirements are mentioned, production will be made in accordance with national standards and our enterprise standards.

1. Please specify your special requirement on noise (if any). (See national standard for noise on P32)
2. Please specify your special requirement on vibration (if any). (Standard: amplitude 0.037mm, 2.3mm/s; see national standard for vibration in page 31))
3. Please specify your special requirement on number of starts (if any). (Standard: twice at cold state; once at hot state.)
4. Please specify your special requirement on direction of rotation (if any). (Standard: clockwise viewed from motor shaft extension end; direction of rotation must be indicated for high efficiency energy-saving motor)
5. Please specify types of driven equipment of motors. (e.g. water pump, mill, crushing machine, compressor, rolling mill, disc mill.)
6. Please specify your special requirement on moment of inertia of the load (if any).
7. Please specify types of drive (e.g. with fluid coupling or gearbox or direct-connected)
8. Please specify types of coupling. (e.g. coupling and belt pulley; belt tension must be indicated)
9. Please specify whether installation location for encoder should be reserved on motor.
10. Please specify whether the motor is used in plateau. (Motors with installation altitude over 1000m are subject to special design.)
11. Please specify the ambient temperature of the motor.
12. Please specify whether the motor is used in humid tropical zone.
13. Please specify whether the motor is used outdoor.
14. Please specify whether the motor is used near the sea.
15. Please specify requirements for anticorrosion (if any). (e.g. F1 for low corrosivity, F2 for medium corrosivity, F3 for high corrosivity.)
16. Please specify types of bearings. (e.g. rolling or sliding bearing). Please specify whether imported bearings are needed. (☐SKF ☐FAG ☐NSK ☐Domestic)
17. Please specify whether bearings bear thrust.

18. Please specify insulation requirements for bearings.
19. Please specify whether lubrication device needs to be provided by us.
20 If required, please specify special requirements for the lubrication device (if any). (Home-made device will be used if there are no requirements.)
21 Is the required motor standby motor? If yes, please indicate the serial number of the original motor.
22. Please specify whether the neutral points need to be led out.
23. Please specify whether CTs are needed. If yes, please indicate their installation position, for example, in the main terminal box or in the neutral point terminal box.
24. If CTs are needed, please specify the quantity.
25. Please specify whether a space heater is needed.
26. Please specify whether vibration sensors are needed.
27. Please specify special requirement for temperature detectors (if any).
28. Please specify special requirement for material of squirrel-cage rotor (if any) (e.g. cast aluminum, copper bar and trapezoid copper bar)
29. Does paint color need to be specified? (Our standard: “jade green” for indoor, "light gray" for outdoor; for others, please refer to the attached "Paint Colors P33-34")
30. Is double-shaft extension necessary for the motor?
31. Please specify the location of terminal boxes. (Standard: on the right side, viewed from shaft extension end.)
32. Please specify special requirement for ratio of max. torque to rated torque of the motor (if any).
33. Please specify special requirement for ratio of starting torque to rated torque of the motor (if any).
34. Please specify special requirement for ratio of starting current to rated current of the motor (if any).
35. Although high-efficiency motors with power less than or equal to 355kW are not covered by allowance issued by China's Ministry of Finance, it is recommended that high-efficiency motors should still be selected.

36 Magnetic slot wedge should be used for all high-efficiency motors with the central height ≤H710.

Y (YKK, YKS) 450~630 Series 10KV High-voltage Three-phase Asynchronous Motors



I. Overview

Y, YKS and YKK series 10KV high voltage three-phase wound-rotor induction motors (frame no. 450~-630) were developed by our company by introducing and absorbing the design and manufacturing technology of high-voltage three-phase asynchronous motors from US-based Westinghouse and Switzerland-based ABB in the 1980s. Based on the opinions of users after they'd launched to market for more than ten years and in combination with our long-term experience in designing and manufacturing high-voltage three-phase asynchronous motors for more than 50 years, they were newly optimized according to national and industry standards. It has been proved by experiments that the new series of products have reached or approached the world's advanced level in terms of technical performance and economic performance. It has been mass-produced and sold around the country and exported to Europe, America, Africa, Southeast Asia, Hong Kong and Macao and other 20 countries and regions. As updated products of the old JS and JSQ series products, they have been well received by users.

The new series motors are exquisite in materials and excellent in production, and feature high efficiency, energy saving, low noise, low vibration, reliable operation, and convenient installation, operation, and maintenance.

The power levels, electrical performance, installation dimensions and tolerances of the new series of motors conform to the national standard GB/T755 *Rotating Electrical Machines - Rating and Performance* and IEC34-1 *Rotating Electrical Machines - Part 1: Rating and Performance,* as well as JB/ T7593 and JB/T7594, etc.

According to GB/T4942.1 and IEC34-5 *Classification of Degrees of Protection Provided by Enclosures of Rotating Electrical Machines*, the enclosure protection degrees of this series of motors are IP23, IP44, IP54 and IP55. Others degrees, if required, may be supplied separately as required.

According to GB/T1993 and IEC34-6 *Rotating electrical machines: methods of cooling*, the cooling methods of this series of motors are IC01, IC611 and IC81W respectively. Others methods, if required, may be supplied separately as required.

The structure and installation type of this series of motors are IMB3 (horizontal, with casters), which conforms to GB997 and IEC34-7 *Rotating Electrical Machines: Classification of Types of Construction, Mounting Arrangements and Terminal Box Position*.

This series of motors are divided into the following three series according to rotor type, protection grade, and cooling mode:

Type	Protection level	Cooling mode	Series
Rain-proof	IP23	IC01	Y series
Closed air-water cooling	IP44, IP54, IP55	IC81W	YKS Series
Closed air-air cooling	IP44, IP54, IP55	IC611	YKK Series

The sample table lists the technical data and installation dimensions of the above series of 10KV motors of various specifications, and can be used to derive 10.5kV and 11kV motors of various specifications.

II. Application scope

This series of motors can be used to drive all kinds of general machinery such as compressors, ventilators, water pumps, cutting machines, transportation machinery and other mechanical equipment, and are used as prime movers in various industrial and mining enterprises such as mines, machinery industries, petrochemical industries and power plants. Motors used to drive machines such as blowers, coal mills, rolling mills, winches, crushers, belt conveyors, etc. with large moment of inertia shall provide relevant technical data when ordering, and sign technical agreements as the basis for special design of motors to ensure reliable operation of motors.

Basic conditions for normal operation of the motors

a. Altitude not higher than 1000M.

b. the maximum ambient temperature shall not exceed 40 ℃ ; Minimum ambient air temperature: -15℃ for motors with rolling bearings; 5°C for motors with sliding bearings; 5°C for YKS series motors;

C. For YKS series motors, the cooling water temperature at the inlet of air cooler shall not exceed 33°C, and the minimum temperature shall be 5°C;

d. The monthly average maximum relative humidity in the wettest month shall be 90%, and the monthly average minimum temperature in this month shall be not higher than 25°C;

e. The power frequency shall be 50hz ±1%;

g. The rated motor working system shall be continuous working system S1.

III. Explanation of models

The model number of the motor consists of the product code and the specification code in order according to GB4831. The product code is represented by the motor series code, with the following meanings:

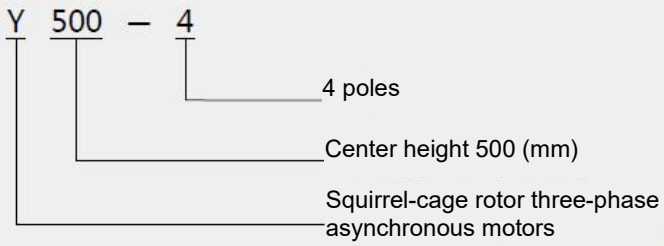
Y-Squirrel-cage rotor 3-phase asynchronous motors

YKS——Closed squirrel-cage rotor 3-phase asynchronous motors with air-water coolers

YKK——Closed squirrel-cage rotor 3-phase asynchronous motor with air-air coolers

The specification code consists of the center height, the iron core length number, and the number of poles.

Example:





IV. Structure Description

YX is a basic series, with protection grade of IP23 and cooling method of IC01. Remove the protective cover at the top of the frame and install different protective covers (coolers) to derive motors with different protection levels and cooling methods, such as YKS (air-water cooling), YKK (air-air cooling) and other series motors.

The motors adopt the external press-fitting structure. The stator winding adopts F-class edge material and anti-corona material, with the winding end fixed with special binding technology, which is firm and reliable. The whole stator is treated by vacuum pressure impregnation of F-class solvent-free paint (VPI). The motor has excellent and reliable insulation performance, moisture resistance and impact resistance.

For this series of motors, the squirrel-cages mostly adopt cast aluminum rotors. No broken rotor bars, reliable operation. The squirrel-cage copper bar rotors adopt advanced and reliable welding technology and in-groove fastening.

There are two types of bearings, rolling bearing and sliding bearing, depending on the power and rotating speed of the electric motor, and the protection grade is IP44. If the motor has a higher protection level, the protection level of the bearing will also be improved.

Motors with rolling bearing structure are all equipped with non-stop grease adding and discharging devices and special greasing tools.

The main outlet box is of sealed structure, and the protection grade is IP54. It is generally installed on the right side of the motor (facing the extended end of the motor shaft) or on the left side as required. The inlet hole of the outlet box is downward. There is a separate ground terminal inside the box.

V. Starting of Squirrel-cage Asynchronous Motors (Y, YKS, YQF, YKK series)

The rotors of squirrel-cage asynchronous motors adopt advanced calculation technology to calculate the starting temperature rise and stress of squirrel-cage rotor, in order to prevent the motor from early damage due to excessive starting load.

Users are advised to check the following: (1) The moment of inertia of the rotating part of the driven mechanical equipment (converted to motor speed) shall not exceed the value of item (load) in the technical data sheet; (2) The power grid used by the user shall ensure that the terminal voltage of the motor during starting is not less than 85% of the rated voltage; (3) The resistance moment characteristics of the driven machinery are those of pumps and fans.

Under the above conditions, the motor is allowed to start for two consecutive times in the actual cold state, and it shall stop naturally between the two times of starting; Or it can start once in the hot state. The motor that exceeds the above limit shall be restarted after stopping for 1 hour.

If the moment of inertia of the mechanical rotating part that needs motor drive exceeds the load value in the technical data sheet, or the motor is required to be started frequently, or the motor may be started with heavy load, please contact the manufacturer in advance to make special design and ensure the reliable start of the motor.

VI. Technical data

6.1 Technical Data of YKK series 10KV motors are shown in Table 1

6.2 Technical Data of Y, YKS Series 10KV motors are shown in Table 2

VII. Appearance and installation dimension

7.1 Overall and Installation Dimensions of YKK (450-630) Series 10KV Motors (Figure 1)

7.2 Overall and Installation Dimensions of Y (450-630) Series 10KV Motors (Figure 2)

7.3 Overall and Installation Dimensions of YKS (450-630) Series 10KV Motors (Figure 3)

7.4 Overall and Installation Dimensions of YKK (560 -630-2) Series 10KV Motors (Figure 4)

VIII. Ordering Notes

Please indicate the following when ordering:

(1) Motor model: (Y500-4)

(2) Rated frequency: (50Hz)

(3) Rated power: (1000KW)

(4) Rated voltage: (10KV)

(5) No. of poles: (4)

(6) Protection level: (IP23)

(7) Cooling mode: (IC01)

(8) Installation type (IMB3)

(9) Rotating direction: Clockwise (facing the extended end of the motor shaft)

(10) outlet box location: [right side of motor (facing the extended end of the motor shaft)]

Matters needing attention

a. Check the moment of inertia of the driven mechanical equipment (converted to the rotating speed of the motor); Please refer to Chapter 5: Starting of Squirrel Cage Motors above;

b. In case of any changes in working conditions or other special requirements, a technical agreement shall be signed before signing the order contract;

c. The technical performance data listed in the table in the sample are all guaranteed values;

d. With the progress of technology and the revision of relevant domestic and international standards, the technical data and overall dimensions in the sample may be changed without prior notice. Please ask us for the formal outline drawing after ordering.

Y (YKK, YKS) 450~630 Series 10KV High-voltage Three-phase Asynchronous Motors

► Technical Data of YKK Series 10kV Motors

Table 1

Model	Rated power (kW)	Rated speed (r/min)	Stator current (A)	Efficiency (%)	Power factor (cos ϕ)	Max. torque / Rated torque $\frac{T_{st}}{T_N}$	Locked-rotor torque / Rated torque $\frac{T_{st}}{T_N}$	Stall current / Rated current $\frac{I_{st}}{I_N}$	Rotation inertia of motor Jm (kg.m^2)	Weight (kg)	Allowable load rotation inertia (kg.m^2)
YKK450-2	220	2984	15.9	91.8	0.87	2.0	0.70	7.0	5.4	3400	5.1
	250	2984	18.0	92.1	0.87	2.0	0.70	7.0	5.4	3400	5.8
	280	2983	19.9	92.3	0.88	2.0	0.70	7.0	5.7	3500	6.4
	315	2982	22.0	92.7	0.89	2.0	0.70	7.0	6.3	3600	7.1
	355	2982	24.8	92.9	0.89	2.0	0.70	7.0	6.6	3680	7.9
	400	2982	27.9	93.1	0.89	2.0	0.70	7.0	7.0	3780	8.8
	450	2982	31.3	93.2	0.89	2.0	0.70	7.0	7.6	3900	9.8
	500	2980	34.8	93.3	0.89	2.0	0.70	7.0	7.8	3950	10.7
YKK500-2	560	2986	38.9	94.4	0.88	2.0	0.70	7.0	8.6	4730	11.9
	630	2986	43.6	94.7	0.88	2.0	0.70	7.0	9.4	4870	13.2
	710	2986	49.1	94.9	0.88	2.0	0.70	7.0	10.2	4990	14.7
	800	2985	54.0	95.0	0.89	2.0	0.70	7.0	11.7	5240	16.4
	900	2985	60.8	95.0	0.89	2.0	0.70	7.0	12.2	5390	18.2
YKK560-2	1000	2980	68.3	95.0	0.89	2.0	0.70	7.0	19.1	6600	20.0
	1120	2981	76.3	95.2	0.89	2.0	0.70	7.0	20.7	6800	22.2
	1250	2981	85.0	95.4	0.89	2.0	0.70	7.0	23.0	7000	24.5
YKK630-2	1400	2984	95.0	95.6	0.89	2.0	0.70	7.0	33.1	11000	27.1
	1600	2985	108.3	95.8	0.89	2.0	0.70	7.0	35.9	11230	30.6
	1800	2986	121.6	96.0	0.89	2.0	0.70	7.0	38.6	11430	34.0
YKK450-4	220	1491	16.3	90.4	0.86	2.0	0.9	7.0	7.6	3000	78
	250	1490	18.3	90.8	0.87	2.0	0.9	7.0	7.6	3000	87
	280	1489	20.1	91.3	0.88	2.0	0.9	7.0	8.6	3100	97
	315	1489	22.5	91.7	0.88	2.0	0.9	7.0	9.3	3190	107
	355	1489	25.3	92	0.88	2.0	0.9	7.0	10.0	3270	119
	400	1489	28.4	92.4	0.88	2.0	0.9	7.0	13.8	3560	133
	450	1489	31.8	92.8	0.88	2.0	0.9	7.0	15.0	3680	147
	500	1489	35.2	93.2	0.88	2.0	0.9	7.0	16.1	3800	161
YKK500-4	560	1491	40.2	93.6	0.86	2.0	0.9	7.0	18.7	4120	178
	630	1491	44.9	94.1	0.86	2.0	0.9	7.0	20.4	4350	196
	710	1490	50	94.2	0.87	2.0	0.9	7.0	22	4550	218
	800	1490	56.3	94.3	0.87	2.0	0.9	7.0	23.7	4750	241
	900	1490	63.1	94.6	0.87	2.0	0.9	7.0	25.4	4910	265

Note: The performance data in the table are all guaranteed values.

► Technical Data of YKK Series 10kV Motors

Table 1 (Continued)

Model	Rated power (kW)	Rated speed (r/min)	Stator current (A)	Efficiency (%)	Power factor (cos φ)	Max. torque / Rated torque $\frac{T_{st}}{T_N}$	Locked-rotor torque / Rated torque $\frac{T_{st}}{T_N}$	Stall current / Rated current $\frac{I_{st}}{I_N}$	Rotation inertia of motor Jm (kg.m^2)	Weight (kg)	Allowable load rotation inertia (kg.m^2)
YKK560-4	1000	1489	68.6	94.6	0.89	2.0	0.9	7.0	37.4	6600	289
	1120	1489	76.7	94.7	0.89	2.0	0.9	7.0	40.2	6790	317
	1250	1489	85.5	94.8	0.89	2.0	0.9	7.0	43.1	6990	347
YKK630-4	1400	1492	95.6	95	0.89	2.0	0.9	6.5	57.3	8600	379
	1600	1492	109	95.2	0.89	2.0	0.9	6.5	62.7	8950	421
	1800	1491	122.4	95.4	0.89	2.0	0.9	6.5	65.3	9120	460
YKK450-6	220	992	17.3	91.7	0.8	2.0	0.8	6.5	13.6	3330	210
	250	992	19.1	92	0.82	2.0	0.8	6.5	14.7	3410	236
	280	992	21.3	92.4	0.82	2.0	0.8	6.5	16	3510	261
	315	992	23.9	92.7	0.82	2.0	0.8	6.5	17.1	3630	291
	355	992	26.9	93	0.82	2.0	0.8	6.5	18.5	3750	324
YKK500-6	400	994	30.3	93.1	0.82	2.0	0.8	7.0	24.7	4260	361
	450	994	33.5	93.4	0.83	2.0	0.8	7.0	26.8	4360	401
	500	994	37.2	93.6	0.83	2.0	0.8	7.0	29	4500	440
	560	994	41.4	94	0.83	2.0	0.8	7.0	31.2	4630	486
	630	994	46.5	94.3	0.83	2.0	0.8	7.0	33.4	4790	539
YKK560-6	710	992	50.4	94.5	0.86	2.0	0.8	7.0	46.2	6350	599
	800	992	56.8	94.6	0.86	2.0	0.8	7.0	49.7	6530	664
	900	992	63.8	94.7	0.86	2.0	0.8	7.0	53.2	6700	735
	1000	992	70.7	94.9	0.86	2.0	0.8	7.0	56.7	6870	805
YKK630-6	1120	944	78.2	95.0	0.87	2.0	0.9	7.0	95.6	8990	886
	1250	944	87.2	95.1	0.87	2.0	0.9	7.0	110.8	9160	972
	1400	933	97.6	95.2	0.87	2.0	0.9	7.0	107.3	9380	1068
YKK500-8	220	745	18.8	91.2	0.74	2.0	0.8	6.0	21.8	3620	423
	250	745	20.7	91.7	0.76	2.0	0.8	6.0	23.7	3790	476
	280	745	23.1	92.1	0.76	2.0	0.8	6.0	25.7	3950	528
	315	745	25.9	92.4	0.76	2.0	0.8	6.0	27.7	4050	588
	355	745	29.1	92.8	0.76	2.0	0.8	6.0	32.3	4200	656
	400	745	32.2	93.2	0.77	2.0	0.8	6.0	37.6	4470	730
	450	745	36.1	93.4	0.77	2.0	0.8	6.0	40.3	4620	812
YKK560-8	500	744	39.0	93.6	0.79	2.0	0.8	6.0	51.9	6300	893
	560	744	43.6	93.8	0.79	2.0	0.8	6.0	55.7	6510	989

Note: The performance data in the table are all guaranteed values.

Y (YKK, YKS) 450~630 Series 10KV High-voltage Three-phase Asynchronous Motors

► Technical Data of YKK Series 10kV Motors

Table 1 (Continued)

Model	Rated power (kW)	Rated speed (r/min)	Stator current (A)	Efficiency (%)	Power factor (cos ϕ)	Max. torque / Rated torque $\frac{T_{st}}{T_N}$	Locked-rotor torque / Rated torque $\frac{T_{st}}{T_N}$	Stall current / Rated current $\frac{I_{st}}{I_N}$	Rotation inertia of motor Jm (kg.m^2)	Weight (kg)	Allowable load rotation inertia (kg.m^2)
YKK560-8	630	744	49.0	94	0.79	2.0	0.8	6.0	59.4	6720	1098
	710	744	54.4	94.2	0.8	2.0	0.8	6.0	63	6930	1221
YKK630-8	800	744	59.7	94.3	0.82	2.0	0.8	6.0	80.2	8400	1357
	900	744	67.1	94.5	0.82	2.0	0.8	6.0	90.8	8750	1505
	1000	743	74.4	94.6	0.82	2.0	0.8	6.0	101.4	9100	1650
YKK500-10	220	595	19.3	91.3	0.72	2.0	0.8	5.5	33.4	4550	729
	250	594	21.9	91.7	0.72	2.0	0.8	5.5	36	4680	820
	280	594	23.7	92.1	0.74	2.0	0.8	5.5	38.6	4810	910
	315	593	25.9	92.3	0.76	2.0	0.8	5.5	41.1	4953	1014
	355	593	29.1	92.6	0.76	2.0	0.8	5.5	43.7	5060	1131
YKK560-10	400	595	31.9	92.7	0.78	2.0	0.8	5.5	63.8	6090	1261
	450	595	35.9	92.8	0.78	2.0	0.8	5.5	68.7	6250	1403
	500	595	39.8	93	0.78	2.0	0.8	5.5	73.5	6410	1544
	560	595	44.5	93.1	0.78	2.0	0.8	5.5	78.4	6570	1710
YKK630-10	630	595	49.9	93.4	0.78	2.0	0.8	5.5	123.1	9150	1902
	710	595	56.1	93.7	0.78	2.0	0.8	5.5	130.9	9340	2117
	800	595	62.9	94.1	0.78	2.0	0.8	5.5	137.3	9600	2355
	900	596	70.6	94.4	0.78	2.0	0.8	5.5	143.7	9770	2614
YKK560-12	250	497	23.4	90.6	0.68	2.0	0.8	5.5	64.2	6030	1277
	280	497	25.4	91.1	0.70	2.0	0.8	5.5	69.1	6190	1418
	315	496	28	91.5	0.71	2.0	0.8	5.5	73.9	6350	1580
	355	496	30.9	92	0.72	2.0	0.8	5.5	78.8	6490	1763
	400	496	34.8	92.3	0.72	2.0	0.8	5.5	83.7	6630	1967
	450	496	39	92.6	0.72	2.0	0.8	5.5	88.5	6770	2191
YKK630-12	500	497	43	93.2	0.72	2.0	0.7	5.5	132.3	9400	2411
	560	497	48.1	93.4	0.72	2.0	0.7	5.5	138.8	9600	2673
	630	496	54	93.6	0.72	2.0	0.7	5.5	145.3	9800	2974
	710	494	59.1	93.8	0.74	2.0	0.7	5.5	185.1	10100	3312

Note: The performance data in the table are all guaranteed values.

Y (YKK, YKS) 450~630 Series 10KV High-voltage Three-phase Asynchronous Motors

► Technical Data of Y, YKS Series 10kV Motors

Table 2

Model	Rated power (kW)	Rated speed (r/min)	Stator current (A)	Efficiency (%)	Power factor (cos φ)	Max. torque / Rated torque T_{st}/T_N	Locked-rotor torque / Rated torque T_{st}/T_N	Stall current / Rated current I_{st}/I_N	Rotation inertia of motor Jm (kg.m^2)	YKS cooling water amount (m3/h)	Weight (kg)		Allowable load rotation inertia (kg.m^2)
											Y	YKS	
Y, YKS450-2	220	2982	15.9	93.0	0.86	1.8	0.60	7.0	5.2	4.0	3080	3500	5.6
	250	2982	17.8	93.2	0.86	1.8	0.60	7.0	5.4	4.5	3080	3500	5.8
	280	2982	20.1	93.5	0.86	1.8	0.60	7.0	5.4	5.0	3080	3500	6.4
	315	2981	22.3	93.6	0.87	1.8	0.60	7.0	5.7	5.5	3170	3600	7.1
	355	2980	25.1	93.8	0.87	1.8	0.60	7.0	6.3	6.0	3250	3700	7.9
	400	2980	28.2	94.1	0.87	1.8	0.60	7.0	6.6	6.5	3310	3800	8.8
	450	2980	31.7	94.3	0.87	1.8	0.60	7.0	7.0	7.0	3410	3900	9.8
	500	2980	35.1	94.4	0.87	1.8	0.60	7.0	7.6	7.5	3530	4050	10.7
	560	2978	39.3	94.5	0.87	1.8	0.60	7.0	7.8	8.0	3580	4100	11.9
	630	2978	44.2	94.6	0.87	1.8	0.60	7.0	8.2	9.0	3670	4200	13.2
Y, YKS500-2	710	2985	49.2	94.7	0.88	1.8	0.60	7.0	9.4	12	4300	4740	14.7
	800	2985	55.4	94.8	0.88	1.8	0.60	7.0	10.2	13	4400	4860	16.4
	900	2983	62.2	94.9	0.88	1.8	0.60	7.0	11.7	14	4520	5110	18.2
	1000	2983	69.1	95.0	0.88	1.8	0.60	7.0	12.2	15	4850	5260	20.0
	1120	2983	77.2	95.2	0.88	1.8	0.60	7.0	13.0	16	5050	5400	22.2
Y, YKS560-2	1250	2978	85.0	95.4	0.89	1.8	0.60	7.0	20.7	15	6280	6800	24.5
	1400	2978	95.1	95.5	0.89	1.8	0.60	7.0	22.2	16	6400	7000	27.1
	1600	2983	108.6	95.6	0.89	1.8	0.60	7.0	24.1	17	6500	7190	30.6
Y, YKS630-2	1800	2983	122.0	95.7	0.89	1.8	0.60	7.0	35.9	23	10400	11230	34.0
	2000	2985	135.4	95.8	0.89	1.8	0.60	7.0	38.6	25	10600	11430	37.4
	2240	2986	151.4	96.0	0.89	1.8	0.60	7.0	41.3	27	10800	11580	41.4
Y, YKS450-4	220	1491	15.9	92.9	0.86	1.8	0.7	7.0	7.6	4.0	2550	3050	78
	250	1490	17.8	93.0	0.87	1.8	0.7	7.0	7.6	4.5	2550	3050	87
	280	1489	20.0	93.1	0.87	1.8	0.7	7.0	7.6	5.0	2550	3050	97
	315	1488	22.2	93.2	0.88	1.8	0.7	7.0	8.6	5.5	2660	3160	107
	355	1488	25.0	93.3	0.88	1.8	0.7	7.0	9.3	6.0	2740	3240	119
	400	1487	28.1	93.5	0.88	1.8	0.7	7.0	10.0	6.5	2820	3320	133
	450	1487	31.4	93.9	0.88	1.8	0.7	7.0	10.7	7.0	2920	3420	147
	500	1486	34.9	94.0	0.88	1.8	0.7	7.0	13.8	8.0	3080	3580	61
	560	1486	39.0	94.2	0.88	1.8	0.7	7.0	15.0	8.5	3200	3700	178
	630	1486	43.8	94.4	0.88	1.8	0.7	7.0	16.1	9.0	3320	3820	196
Y, YKS500-4	710	1488	49.0	95.0	0.88	1.8	0.8	6.5	18.8	10	3950	4550	218
	800	1488	55.2	95.1	0.88	1.8	0.8	6.5	20.4	11	4100	4700	241
	900	1487	61.3	95.2	0.89	1.8	0.8	6.5	22.1	12	4250	4850	265

Note: The performance data in the table are all guaranteed values.

Y (YKK, YKS) 450~630 Series 10KV High-voltage Three-phase Asynchronous Motors

► Technical Data of Y, YKS Series 10kV Motors

Table 2 (Continued)

Model	Rated power (kW)	Rated speed (r/min)	Stator current (A)	Efficiency (%)	Power factor (cos ϕ)	Max. torque Rated torque $\frac{T_{st}}{T_N}$	Locked-rotor torque Rated torque $\frac{T_{st}}{T_N}$	Stall current Rated current $\frac{I_{st}}{I_N}$	Rotation inertia of motor Jm (kg.m^2)	YKS cooling water amount (m3/h)	Weight (kg)		Allowable load rotation inertia (kg.m^2)
											Y	YKS	
Y, YKS500-4	1000	1487	68.1	95.3	0.89	1.8	0.8	6.5	23.8	13	4400	5000	289
	1120	1487	76.2	95.4	0.89	1.8	0.8	6.5	25.5	14	4550	5150	317
Y, YKS560-4	1250	1488	84.9	95.5	0.89	1.8	0.8	6.5	0.2	15	5850	6550	347
	1400	1488	94.9	95.7	0.89	1.8	0.8	6.5	43.1	16	6050	6750	379
	1600	1487	108.3	95.8	0.89	1.8	0.8	6.5	45.9	17	6230	6930	421
Y, YKS630-4	1800	1491	121.8	95.9	0.89	1.8	0.7	6.5	61.8	17	8760	9660	460
	2000	1491	135.1	96	0.89	1.8	0.7	6.5	65.3	17.5	9140	10040	498
	2240	1491	151.2	96.1	0.89	1.8	0.7	6.5	69.0	18	9520	10420	541
Y, YKS450-6	220	992	17.4	92.5	0.79	1.8	0.9	7.0	13.6	4	2850	3440	210
	250	991	19.2	92.6	0.81	1.8	0.8	6.5	13.6	4.5	2850	3400	236
	280	990	21.3	92.7	0.82	1.8	0.8	6.0	13.6	5	2850	3400	261
	315	990	23.6	92.8	0.83	1.8	0.8	6.0	14.7	5.5	2890	3400	291
	355	990	26.5	93.1	0.83	1.8	0.8	6.0	15.7	6.0	2960	3510	324
	400	989	29.8	93.3	0.83	1.8	0.8	6.0	17.1	6.5	3080	3630	361
	450	990	33.5	93.5	0.83	1.8	0.8	6.0	18.5	7	3220	3770	401
Y, YKS500-6	500	992	37	93.9	0.83	1.8	0.7	6.0	24.7	8	3630	4230	440
	560	992	40.9	94.1	0.4	1.8	0.7	6.0	26.8	5.5	3770	4370	486
	630	992	45.9	94.4	0.84	1.8	0.7	6.0	29.1	9	3930	4530	539
	710	992	51.6	94.6	0.84	1.8	0.7	6.0	31.2	10	4080	4680	599
	800	992	58.1	94.7	0.84	1.8	0.7	6.0	33.5	11	4250	4850	664
Y, YKS560-6	900	990	62.9	94.9	0.87	1.8	0.7	6.0	46.2	12	5500	6200	735
	1000	990	69.8	95.1	0.87	1.8	0.7	6.0	49.7	13	5700	6300	805
	1120	990	78	95.3	0.87	1.8	0.7	6.0	53.2	14	5850	6550	886
	1250	990	87	95.4	0.87	1.8	0.7	6.0	56.7	15	6020	6720	972
Y, YKS630-6	1400	992	98.2	95.7	0.86	1.8	0.6	6.0	95.6	16	8080	8980	1068
	1600	992	112.1	95.8	0.86	1.8	0.6	6.0	100.8	17	8250	9150	1192
	1800	991	126	95.9	0.86	1.8	0.6	6.0	107.3	18	8470	9370	1312
Y, YKS500-8	220	745	18.9	92.1	0.73	1.8	0.7	6.0	21.8	4.5	3180	3780	423
	250	744	20.9	92.3	0.75	1.8	0.7	6.0	21.8	5	3200	3800	476
	280	744	23.3	92.5	0.75	1.8	0.7	6.0	21.8	5.5	3220	3820	528
	315	743	25.5	92.8	0.77	1.8	0.7	6.0	13.7	6	3360	3960	588
	355	743	28.6	93.1	0.77	1.8	0.7	6.0	25.7	6.5	3500	4100	656
	400	743	31.8	93.2	0.78	1.8	0.7	6.0	27.7	7	3780	4380	730
	450	744	35.7	93.4	0.78	1.8	0.7	6.0	32.3	7.5	3920	4520	812

Note: The performance data in the table are all guaranteed values.

► Technical Data of Y, YKS Series 10kV Motors

Table 2 (Continued)

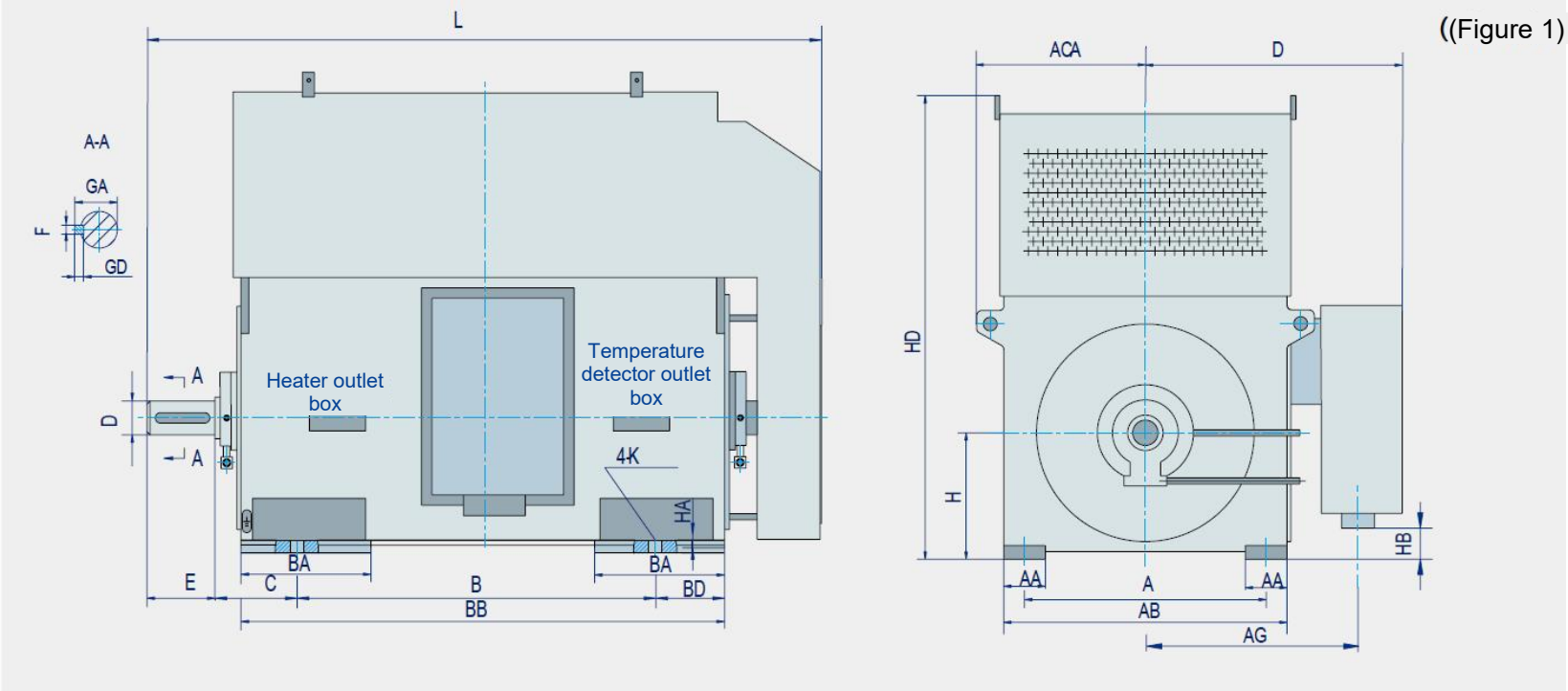
Model	Rated power (kW)	Rated speed (r/min)	Stator current (A)	Efficiency (%)	Power factor (cos ϕ)	Max. torque / Rated torque $\frac{T_{st}}{T_N}$	Locked-rotor torque / Rated torque $\frac{T_{st}}{T_N}$	Stall current / Rated current $\frac{I_{st}}{I_N}$	Rotation inertia of motor Jm (kg.m^2)	YKS cooling water amount (m3/h)	Weight (kg)		Allowable load rotation inertia (kg.m^2)
											Y	YKS	
Y, YKS500-8	500	744	39	93.8	0.79	1.8	0.7	6.0	37.6	8	4060	4660	893
	560	744	43.6	93.9	0.79	1.8	0.7	6.0	40.3	9	4200	4800	989
Y, YKS560-8	630	742	47	94.4	0.82	1.8	0.7	6.0	52	10	5430	6130	1098
	710	742	52.8	94.6	0.82	1.8	0.7	6.0	55.7	11	5640	6340	1221
	800	742	59.5	94.6	0.82	1.8	0.7	6.0	59.4	12	5850	6550	1357
	900	742	66.8	94.7	0.82	1.8	0.7	6.0	63	13	6060	6760	1505
Y, YKS630-8	1000	743	73.2	95	0.83	1.8	0.7	6.0	90.8	14	7700	8600	1650
	1120	742	81.8	95.2	0.83	1.8	0.7	6.0	101.4	15	8050	8950	1820
	1250	742	91.2	95.3	0.83	1.8	0.7	6.0	113.1	16	8420	9320	2001
Y, YKS500-10	220	594	19.2	92.1	0.72	1.8	0.7	5.5	30.8	4.5	3820	4420	729
	250	594	21.7	92.2	0.72	1.8	0.7	5.5	33.4	5	3970	4570	820
	280	593	23.6	92.4	0.74	1.8	0.7	5.5	36	5.5	4120	4720	910
	315	593	26.5	92.6	0.74	1.8	0.7	5.5	38.6	6	4280	4880	1014
	355	592	29.4	92.8	0.75	1.8	0.7	5.5	41.1	6.5	4430	5030	1131
	400	592	33.1	93	0.75	1.8	0.7	5.5	43.7	7.5	4580	5180	1261
Y, YKS560-10	450	595	36.2	93.2	0.77	1.8	0.7	6.0	63.8	8.5	5400	6100	1403
	500	595	40.1	93.4	0.77	1.8	0.7	6.0	68.7	9.5	5530	6230	1544
	560	595	44.3	93.5	0.78	1.8	0.7	6.0	73.5	10.5	5700	6400	1710
	630	595	49.8	93.7	0.78	1.8	0.7	6.0	78.4	11.5	5860	6560	1902
	710	595	56	93.9	0.78	1.8	0.7	6.0	83.3	12.5	6050	6750	2117
Y, YKS630-10	800	595	61.2	94.3	0.8	1.8	0.7	6.0	130.9	13.5	8100	9000	2355
	900	594	68.7	94.5	0.8	1.8	0.7	6.0	137.3	14.5	8360	9260	2641
	1000	595	76.3	94.6	0.8	1.8	0.7	6.0	143.7	15.5	8530	9430	2870
	1120	595	85.4	94.7	0.8	1.8	0.7	6.0	150.1	16.5	8700	9600	3170
Y, YKS560-12	250	497	23.1	92	0.68	1.8	0.7	6.0	63.3	5.5	5140	5840	1277
	280	496	25	92.2	0.7	1.8	0.7	6.0	63.3	6	5140	5840	1418
	315	496	27	92.3	0.73	1.8	0.7	6.0	68.1	6.5	5320	6020	1580
	355	496	30.4	92.5	0.73	1.8	0.7	6.0	73	7	5530	6230	1763
	400	496	34.1	92.7	0.73	1.8	0.7	6.0	77.9	8	5700	6400	1967
	450	495	38.3	92.9	0.73	1.8	0.7	6.0	82.7	9	5860	6560	2191
	500	495	42.4	93.2	0.73	1.8	0.7	6.0	87.6	10	6050	6750	2411
Y, YKS630-12	560	496	46.7	93.5	0.74	1.8	0.7	6.0	132.3	11	8040	8940	2673
	630	496	52.5	93.7	0.74	1.8	0.7	6.0	138.8	12	8210	9110	2974
	710	496	59	93.9	0.74	1.8	0.7	6.0	145.3	13	8380	9280	3313
	800	496	66.2	94.3	0.74	1.8	0.7	6.0	151.7	14	8570	9470	3688

Note: The performance data in the table are all guaranteed values.

Y (YKK, YKS) 450~630 Series 10KV High-voltage Three-phase Asynchronous Motors

►Overall and Installation Dimensions of YKK Series 10kV Asynchronous Motors (Frame No. 450-630)

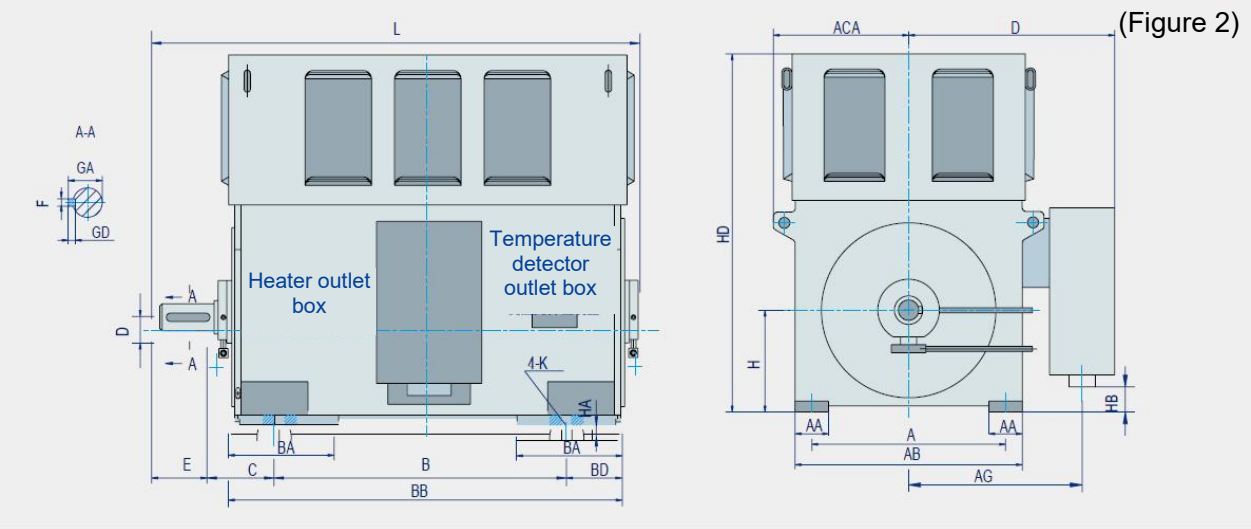
((Figure 1)



Frame No.	No. of poles No of poles	Mounting dimensions and tolerance										Overall dimensions											
		A	B	C	D	E	F	GA	GD	H	K	AA	AB	AC	AD	AG	BA	BB	BD	HA	HB	HD	L
450	2	800± 1.75	1120±1.75	400±4	$\Phi 90^{+0.035}_{+0.013}$	170±0.50	$25^{0}_{-0.052}$	95	14	$450^{0}_{-1.0}$	$\Phi 35^{+0.62}_{0}$	150	1000	600	1020	760	500	1650	265	35	27	1630	2260
	4			355±4	$\Phi 110^{+0.035}_{+0.013}$	210±0.57	$28^{0}_{-0.052}$	116	16									1650	270				2330
	6																	1760	380				2440
																		1680	300				2360
500	2	900±2.10	1250±2.10	560±4	$\Phi 100^{+0.035}_{+0.013}$	210±0.57	$28^{0}_{-0.052}$	106	16	$500^{0}_{-1.0}$	$\Phi 42^{+0.62}_{0}$	165	1120	660	1170	880	500	2010	300	35	160	1830	2620
	4			475±4	$\Phi 120^{+0.035}_{+0.013}$		$32^{0}_{-0.052}$	127	18									2010	380				2710
	6~8				$\Phi 130^{+0.040}_{+0.015}$	250±0.57		137	18									1810	180				2560
	10																	2010	380				2710
560	4	1000±2.10	1400±2.10	500±4	$\Phi 150^{+0.040}_{+0.015}$	250±0.57	$36^{0}_{-0.052}$	158	20	$560^{0}_{-1.0}$	$\Phi 42^{+0.62}_{0}$	190	1240	740	1230	940	600	2210	430	40	250	2250	3050
	6~ 12				$\Phi 160^{+0.040}_{+0.015}$	300±0.65	$40^{0}_{-0.052}$	169	22									2010	230				2900
630	4	1120±2.10	1600±2.10	530±4	$\Phi 170^{+0.040}_{+0.015}$	300±0.65	$40^{0}_{-0.052}$	179	22	$630^{0}_{-1.0}$	$\Phi 48^{+0.62}_{0}$	250	1400	840	1310	1020	640	2210	205	53	350	2570	3230
	6~8				$\Phi 180^{+0.040}_{+0.015}$		$45^{0}_{-0.052}$	190	25									2210	205				3170
	10-12																	2210	205				3170

►Overall and Installation Dimensions of YKK Series 10kV Asynchronous Motors (Frame No. 450-630)

(Figure 2)

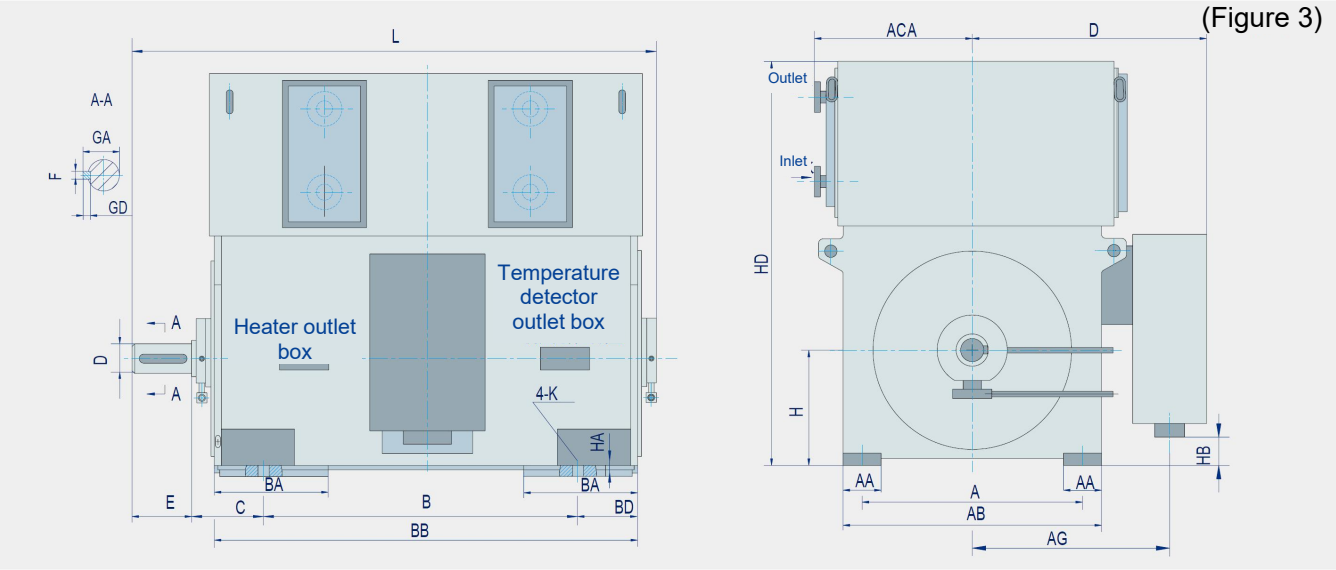


Frame No.	No. of poles No of poles	Mounting dimensions and tolerance										Overall dimensions											
		A	B	C	D	E	F	GA	GD	H	K	AA	AB	AC	AD	AG	BA	BB	BD	HA	HB	HD	L
450	2	800±1.75	1120±1.75	400±4	$\Phi 90^{+0.035}_{+0.013}$	170±0.50	$25^{0}_{-0.052}$	95	14	$450^{0}_{-1.0}$	$\Phi 35^{+0.62}_{0}$	150	1000	600	1020	760	500	1650	265	35	27	1400	2050
	4			355±4	$\Phi 110^{+0.035}_{+0.013}$	210±0.57	$28^{0}_{-0.052}$	116	16									1650	270				2040
																		1760	380				2150
	6																	1680	300				2070
500	2	900±2.10	1250±2.10	475±4	$\Phi 100^{+0.035}_{+0.013}$	210±0.57	$28^{0}_{-0.052}$	106	16	$500^{0}_{-1.0}$	$\Phi 42^{+0.62}_{0}$	165	1120	660	1170	880	500	2010	380	35	160	1650	2410
	4				$\Phi 120^{+0.035}_{+0.013}$		$32^{0}_{-0.052}$	127	18									2010	380			1560	2410
	6~8				$\Phi 130^{+0.040}_{+0.015}$	250±0.57		137	18									1810	180				2240
	10																	2010	380				2440
560	2	1000±2.10	1400±2.10	560±4	$\Phi 130^{+0.040}_{+0.015}$	250±0.57	$32^{0}_{-0.052}$	137	18	$560^{0}_{-1.0}$	$\Phi 42^{+0.62}_{0}$	190	1240	740	1230	940	600	2010	325	40	250	1700	2760
	4			500±4	$\Phi 150^{+0.040}_{+0.015}$		$36^{0}_{-0.052}$	158	20									2010	430			1690	2670
	6~12				$\Phi 160^{+0.040}_{+0.015}$	300±0.65	$40^{0}_{-0.052}$	169	22									2010	230				2520
630	2	1120±2.10	1600±2.10	560±4	$\Phi 140^{+0.040}_{+0.015}$	250±0.57	$36^{0}_{-0.052}$	148	20	$630^{0}_{-1.0}$	$\Phi 48^{+0.62}_{0}$	250	1400	840	1310	1020	640	2210	325	53	350	1950	2960
	4			530±4	$\Phi 170^{+0.040}_{+0.015}$	300±0.65	$40^{0}_{-0.052}$	179	22									2210	205			1930	2740
	6~8				$\Phi 180^{+0.040}_{+0.015}$		$45^{0}_{-0.052}$	190	25									2210	205				2740
	10-12																	2210	205				2740

Y (YKK, YKS) 450~630 Series 10KV High-voltage Three-phase Asynchronous Motors

►Overall and Installation Dimensions of YKS Series 10kV Asynchronous Motors (Frame No. 450-630)

(Figure 3)

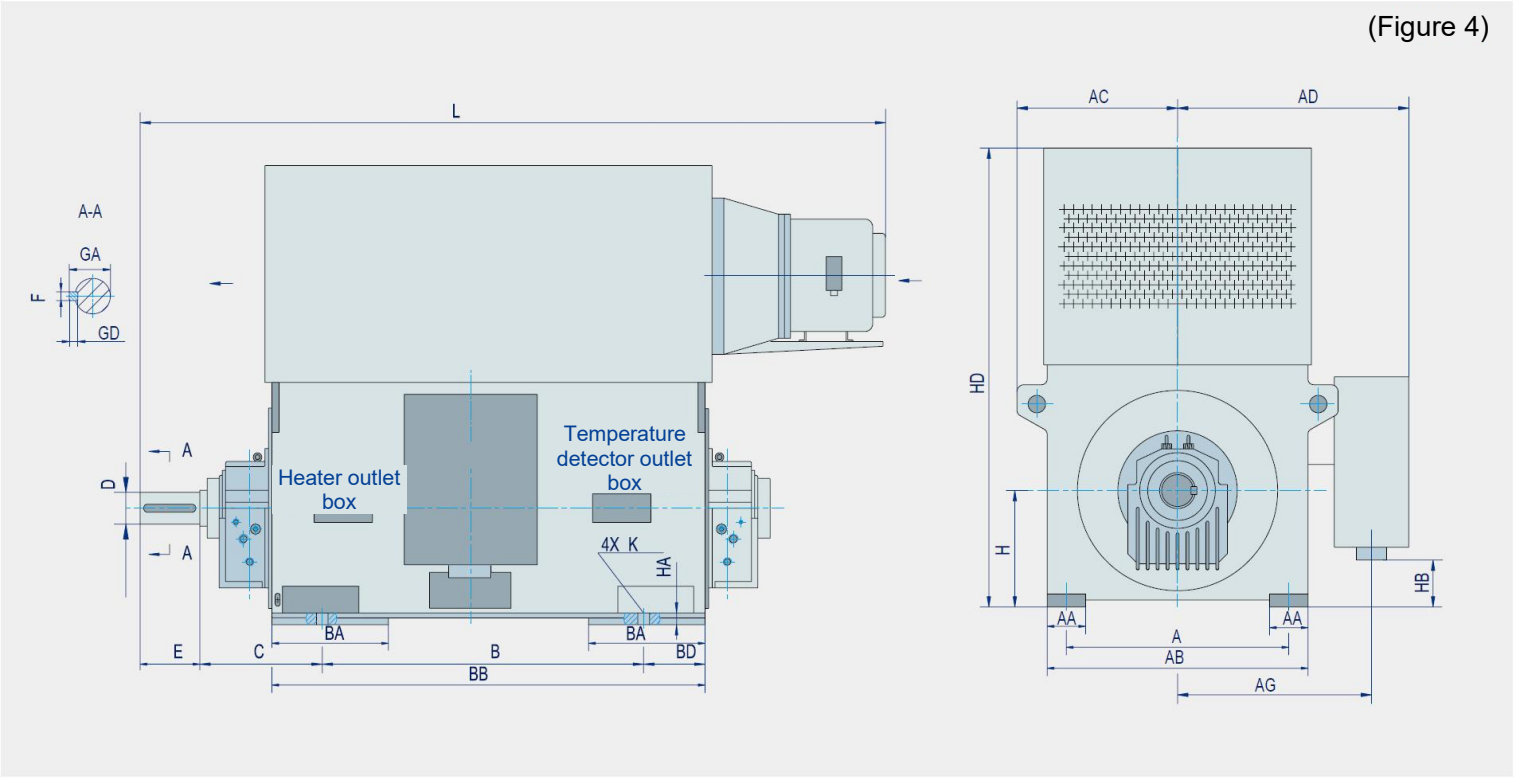


Frame No.	No. of poles No of poles	Mounting dimensions and tolerance										Overall dimensions											
		A	B	C	D	E	F	GA	GD	H	K	AA	AB	AC	AD	AG	BA	BB	BD	HA	HB	HD	L
450	2	800± 1.75	1120±1.75	400±4	$\Phi 90^{+0.035}_{+0.013}$	170±0.50	$25^{0}_{-0.052}$	95	14	$450^{0}_{-1.0}$	$\Phi 35^{+0.62}_{0}$	150	1000	700	1020	760	500	1650	265	35	27	1400	2050
	4			355±4	$\Phi 110^{+0.035}_{+0.013}$	210±0.57	$28^{0}_{-0.052}$	116	16									1650	270				2040
	6																	1760	380				2150
																		1680	300				2070
500	2	900±2.10	1250±2.10	475±4	$\Phi 100^{+0.035}_{+0.013}$	210±0.57	$28^{0}_{-0.052}$	106	16	$500^{0}_{-1.0}$	$\Phi 42^{+0.62}_{0}$	165	1120	760	1170	880	500	2010	380	35	160	1650	2410
	4				$\Phi 120^{+0.035}_{+0.013}$		$32^{0}_{-0.052}$	127	18									2010	380			1560	2410
	6~8				$\Phi 130^{+0.040}_{+0.015}$	250±0.57		137	18									1810	180				2240
	10																	2010	380				2440
560	2	1000±2.10	1400±2.10	560±4	$\Phi 130^{+0.040}_{+0.015}$	250±0.57	$32^{0}_{-0.052}$	137	18	$560^{0}_{-1.0}$	$\Phi 42^{+0.62}_{0}$	190	1240	870	1230	940	600	2010	325	40	250	1700	2760
	4			500±4	$\Phi 150^{+0.040}_{+0.015}$		$36^{0}_{-0.052}$	158	20									2010	430			1690	2670
	6~12				$\Phi 160^{+0.040}_{+0.015}$	300±0.65	$40^{0}_{-0.052}$	169	22									2010	230				2520
630	2	1120±2.10	1600±2.10	560±4	$\Phi 140^{+0.040}_{+0.015}$	250±0.57	$36^{0}_{-0.052}$	148	20	$630^{0}_{-1.0}$	$\Phi 48^{+0.62}_{0}$	250	1400	900	1310	1020	640	2210	325	53	350	1950	2960
	4			530±4	$\Phi 170^{+0.040}_{+0.015}$	300±0.65	$40^{0}_{-0.052}$	179	22									2210	205			1930	2740
	6~8				$\Phi 180^{+0.040}_{+0.015}$		$45^{0}_{-0.052}$	190	25									2210	205				2740
	10-12																	2210	205				2740

Note: H560-2 and H630-2 adopt sliding bearings.

►Overall and Installation Dimensions of YKK Series 10kV Asynchronous Motors (Frame No. 450-500)

(Figure 4)



Frame No.	No. of poles No of poles	Mounting dimensions and tolerance										Overall dimensions											
		A	B	C	D	E	F	GA	GD	H	K	AA	AB	AC	AD	AG	BA	BB	BD	HA	HB	HD	L
560	2	1000±2.1	1400±2.1	560±4	$\Phi130^{+0.040}_{+0.015}$	250±0.75	$32^{0}_{-0.052}$	137	18	$560^{0}_{-1.0}$	$\Phi42^{+0.62}_{0}$	190	1240	740	1440	940	600	2010	325	40	250	2180	3700
630	2	1120±2.1	1600±2.1	560±4	$\Phi140^{+0.040}_{+0.015}$	250±0.75	$46^{0}_{-0.052}$	148	20	$630^{0}_{-1.0}$	$\Phi48^{+0.62}_{0}$	235	1400	840	1630	1020	640	2210	325	53	350	2530	3900



National Standards for Vibration of Electric Machines National Standards for Noise of Electric Machines

According to the requirements in national standard GB10068-2008 of the People's Republic of China (PRC) *Mechanical Vibration of Certain Machines with Shaft Heights 56 mm and Higher - Measurement, Evaluation and Limits of Vibration Severity* for vibration of electric machines, during running at no load, our motors are subject to the following vibration intensity limits expressed by displacement and speed measured in the factory vibration test: 37μm and 2.3mm/s.

Excerpts from National Standards Are as Follows:

• Vibration intensity limits

The vibration limits are applicable to the broadband root mean square values of vibration speed, displacement and acceleration measured in the frequency range specified in Chapter 5. The maximum values of these three measured values are used to evaluate the intensity of vibration.

Under the two installation conditions specified in Chapter 6, the vibration intensity of DC and 3-phase AC motors with the shaft center height of 56mm or above shall not exceed the limits in Table 1. Vibration levels are divided into two types. If the vibration level is not specified, the vibration limit of the motor shall meet the requirements of level "A".

For motors with the rotating speed of 600 r/min~3600 r/min, only the vibration speed needs to measure during the inspection test. During the type test, all three vibration values shall be measured.

Note: When the inspection test is carried out under free suspension installation, the type test must include the test under the condition of rigid installation. This article applies to all speed ranges in this standard.

Table 1 Limits of vibration intensity (root mean square value) expressed by displacement, velocity and acceleration for different shaft center heights H (mm)

Vibration Rating	Shaft center height/mm	56<H≤132			132<H≤280			H>280		
	Installation mode	Displacement/μm	Speed/ (mm/s)	Acceleration (m/s^2)	Displacement /μm	Speed/ (mm/s)	Acceleration (m/s^2)	Displacement /μm	Speed/ (mm/s)	Acceleration (m/s^2)
A	Free suspension	25	1.6	2.5	35	2.2	3.5	45	2.8	4.4
	Rigid installation	21	1.3	2.0	29	1.8	2.8	37	2.3	3.6
B	Free suspension	11	0.7	1.1	18	1.1	1.7	29	1.8	2.8
	Rigid installation	-	-	-	14	0.9	1.4	24	1.5	2.4
Note 1: Grade "A" is suitable for motors with no special requirements for vibration. Note 2: Grade "B" is suitable for motors with special requirements for vibration. Motors with the shaft center height lower than 132 mm is not considered for rigid installation. Note 3: The interface frequency of displacement and speed and that of speed and acceleration are 10 Hz and 250 Hz respectively.										

Note 1: Manufacturers and users should consider that measuring instruments may have a measuring tolerance of ±10%.

Note 2: Take the shaft center height of a horizontal motor with casters of the frame as that of a motor without casters of the frame or a motor with casters upward or a vertical motor.

Note 3: A motor with good self-balance and the vibration intensity level meeting the requirements in Table 1 will also show great vibration when installed in the field due to various factors, such as uneven foundation, reaction of load machinery and ripple current in the power supply. In addition, because the natural frequencies of the driven units are very close to the excitation frequencies of the tiny residual unbalance of the motor rotor, vibration will also occur. In these cases, not only the motor but also every unit in the device shall be tested, as shown in ISO10816-3.

National Standards for Vibration of Electric Machines

There are the following descriptions and requirements for motor noise in national standard GB10069.3-2008 of the People's Republic of China (PRC): *Measurement of Airborne Noise Emitted by Rotating Electrical Machines and Noise Limits-Part3: Noise Limits*.

Noise can be expressed by sound power level or sound pressure level, in decibels (dB). Motor noise is generally assessed by sound power level, and the values of sound power level and sound pressure level are quite different according to the size of the motor (envelope surface area). Generally, the sound power level is 15 ~ 18 (dB) larger than the sound pressure level.

- On page 6 of the national standard, it is stipulated that the sound power level Lw (dB) measured at different rotating speeds, cooling modes and rated output power shall not exceed the values in the following table.

Rated speed n_N/(r/min)	$n_N \leq 960$			$960 < n_N \leq 1320$			$1320 < n_N \leq 1900$			$1900 < n_N \leq 2360$			$2360 < n_N \leq 3150$			$3150 < n_N \leq 3750$		
Cooling mode (Simple code)	IC01 IC11 IC21 Note 1	IC411 IC511 IC611 Note 2	IC31 IC71W IC81W IC8A1W7 Note 2	IC01 IC11 IC21 Note 1	IC411 IC511 IC611 Note 2	IC31 IC71W IC81W IC8A1W7 Note 2	IC01 IC11 IC21 Note 1	IC411 IC511 IC611 Note 2	IC31 IC71W IC81W IC8A1W7 Note 2	IC01 IC11 IC21 Note 1	IC411 IC511 IC611 Note 2	IC31 IC71W IC81W IC8A1W7 Note 2	IC01 IC11 IC21 Note 1	IC411 IC511 IC611 Note 2	IC31 IC71W IC81W IC8A1W7 Note 2	IC01 IC11 IC21 Note 1	IC411 IC511 IC611 Note 2	IC31 IC71W IC81W IC8A1W7 Note 2
Rated output P_N/kW (or kVA)																		
$1 \leq P_N \leq 1.1$	73	73	I	76	76	I	77	78	I	79	81	I	81	84	I	82	88	I
$1.1 < P_N \leq 2.2$	74	74	I	78	78	I	81	82	I	83	85	I	85	88	I	86	91	I
$2.2 < P_N \leq 5.5$	77	78	I	81	82	I	85	86	I	86	90	I	89	93	I	93	95	I
$5.5 < P_N \leq 11$	81	82	I	85	85	—	88	90	—	90	93	—	93	97	—	97	98	—
$11 < P_N \leq 22$	84	86	I	88	88	I	91	94	I	93	97	I	96	100	I	97	100	I
$22 < P_N \leq 37$	87	87	I	91	91	I	94	98	I	96	100	I	99	102	I	101	102	I
$37 < P_N \leq 55$	90	93	I	94	94	—	97	100	I	98	102	I	101	104	I	103	104	I
$55 < P_N \leq 110$	93	96	I	97	98	I	100	103	I	101	104	I	103	106	I	105	106	I
$110 < P_N \leq 220$	97	99	I	100	102	I	103	106	I	103	107	I	105	109	I	107	110	I
$220 < P_N \leq 550$	99	102	98	103	105	100	106	108	102	106	109	102	107	111	102	110	113	105
$550 < P_N \leq 1100$	101	105	100	106	108	103	108	111	104	108	111	104	109	112	104	111	116	106
$1000 < P_N \leq 2200$	103	107	102	108	110	105	109	113	105	109	113	105	110	113	105	112	118	107
$2200 < P_N \leq 5500$	105	109	104	110	112	106	110	115	106	111	115	107	112	115	107	114	120	109

Note 1: The typical protection type is IP22 or IP23.
Note 2: The typical protection type is IP44 or IP54.

- There is no specific requirement for sound pressure level in national standards. If there is a requirement, the sound pressure level can be directly converted from the sound power level of the following equation:

(Equation 1)

$$L_P = L_w - 10\lg\left(\frac{S}{S_0}\right)$$

Where:

L_P - sound pressure level in free field on the reflecting surface 1m away from the motor.

L_w - sound power level determined according to the standards

S_0 - 1.0 m^2

S-motor measurement envelope surface area 1m away from the reference body

Paint colors for motor

According to the statistics of the colors used by customers for many years, combining some advantages and disadvantages, it is suggested that customers choose from the following common colors when ordering.

Preferred recommended colors:

When the customer doesn't specify the color of the top coat, the hammer paint of our factory is adopted by default, and the motor used indoors is "jade green" and the motor used outdoors is "light gray".

Advantages: The two colors are polyurethane hammer paint with beautiful and clear patterns, bright and plump paint film, good weather resistance, oil resistance, chemical corrosion resistance, and good hardness and wear resistance. The paint film dries quickly and is convenient for construction. It is widely used in indoor and outdoor metal structures.

Examples:



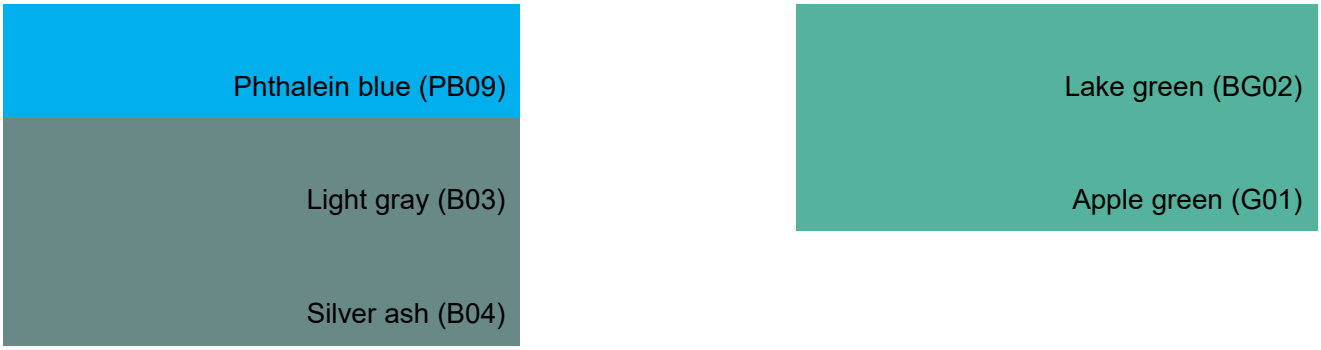
Light gray



Jade green

Other recommended colors:

Colors in commonly used national standard color card GSB 05-1426-2001



Colors in commonly used international color card RAL



Note:

1. The electronic version of paint colors is for reference only, and the construction and quality inspection are subject to the physical standard color cards.

2. Please indicate the paint label number in the contract documents when ordering.