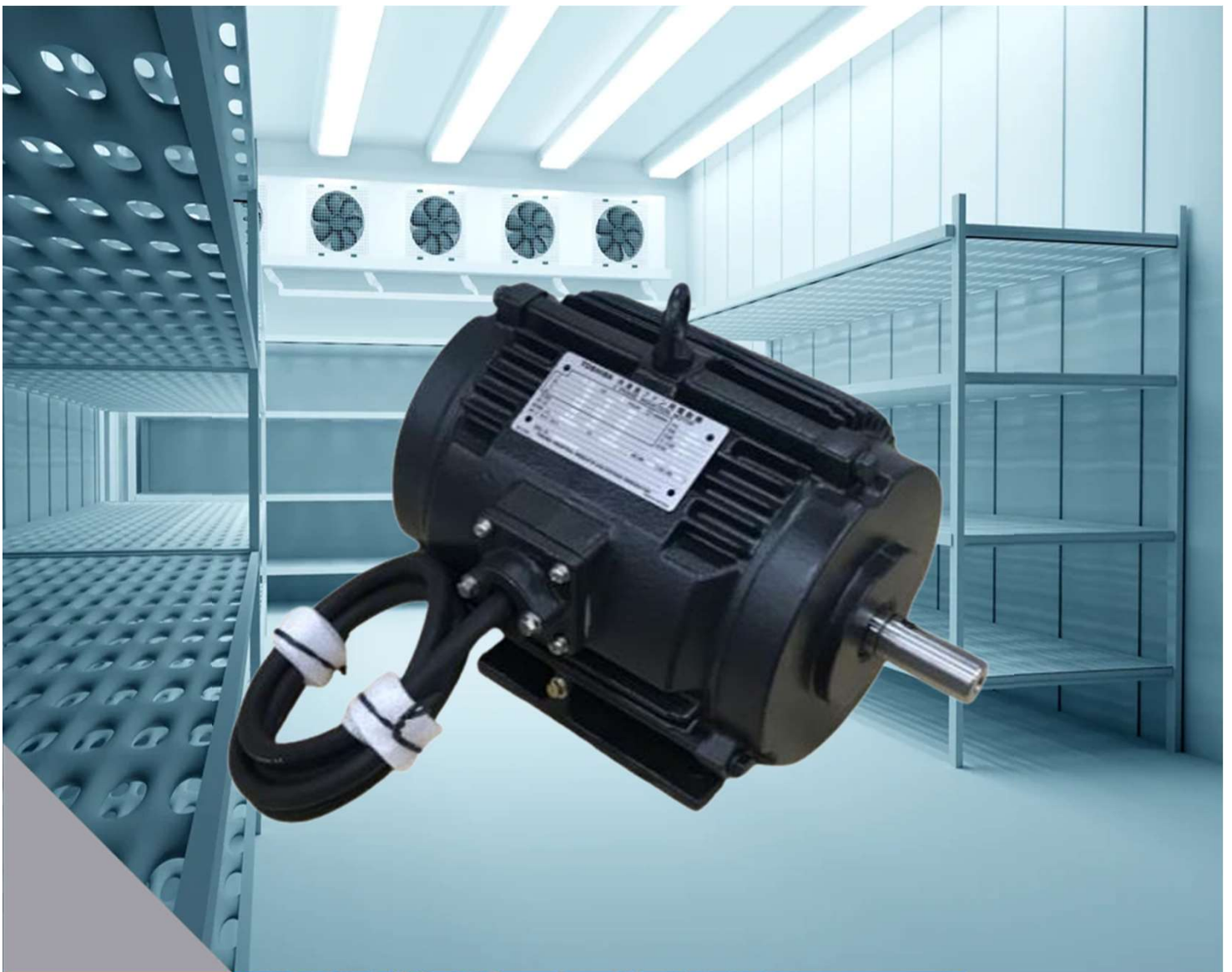


# **TOSHIBA**

## **Low Voltage Three-Phase Squirrel-cage Induction Motor REFRIGERATOR FAN MOTOR**



## General Information

The cooling fan motor is designed to achieve IE3 efficiency, bringing high value to the freezer industry, installed in equipment with operating temperature (-50~-20°C) with this special design allowing the motor to operate stably in refrigerators, freezers and cooling fans.

## Available Features

- IE3 Efficiency Levels per JIS C 4213 : 2014
- Totally Enclosed, Non-Ventilated
- Connection Lead wire is Cab type (without terminal box) with free length according to customer request
- With feature of motor frame by cast iron
- Designed with materials that can withstand cold

## Suitable for various application



### General air conditioning

For cooling and heating, air conditioning and ventilation, apply for axial flow fan



### Freezing and refrigeration

For blowing, exhausting, and agitating cold air in freezers and refrigerators



### Drying

For drying wood, tobacco, laver, fish, grain, grass, rush, shiitake mushrooms, etc.



### Equipment cooling

For help maintain airflow and temperature control in buildings, warehouses, and factories.

## Standard Specifications

| Item |                             |             | Description  |     |      |      |
|------|-----------------------------|-------------|--|-----|------|------|
| 1    | Pole                        |             | 4  |     |      |      |
| 2    | Output (kW)                 |             | 0.75   | 1.5 | 2.2  | 3.7  |
| 3    | Frame size                  |             | 80M  | 90L | 100L | 112M |
| 4    | Insulation Class            |             | 120 (E)  |     |      |      |
| 5    | Type                        |             | IKH3   |     |      |      |
| 6    | Form                        |             | FBK21E   |     |      |      |
| 7    | Voltage - Frequency         |             | 200/200/220V-50/60/60Hz  |     |      |      |
| 8    | Efficiency Class            |             | IE3  |     |      |      |
| 9    | Enclosure Construction      |             | TENV (TOTALLY-ENCLOSED, NON-VENTILATED)                          |     |      |      |
| 10   | Protection                  |             | IP40   |     |      |      |
| 11   | Cooling system              |             | IC411  |     |      |      |
| 12   | Grease                      |             | MULTEMP SRL  |     |      |      |
| 13   | Time Rating                 |             | Cont. (S1)   |     |      |      |
| 14   | Rotational Direction*       |             | Counterclockwise, as viewed from load side                       |     |      |      |
| 15   | Mounting Direction          |             | Foot Mounting, Horizontal  |     |      |      |
| 16   | Driven connection           |             | Direct connection  |     |      |      |
| 17   | Lead wire Connection Method | Exit method | Cab type (without terminal box)                                  |     |      |      |
|      |                             | Location    | Left side as see from the load side                              |     |      |      |
| 18   | Temperature **              |             | -50 ~ -20 °C   |     |      |      |
| 19   | Humidity                    |             | Up to 100% (No condensation)                                     |     |      |      |
| 20   | Altitude                    |             | Up to 1000m  |     |      |      |
| 21   | Coating                     |             | Dark green (Approximate color match to JIS code 3.74BG3.04/1.25) |     |      |      |
| 22   | Standard                    |             | JIS C 4213:2014  |     |      |      |

\*Can also be used clockwise; please inquire for details

\*\* - Make sure there is no external thermal influence during operation

- Make sure there is no obstruction to the motor cooling airflow

(Ensure that the airflow is the same as when the motor is operating alone)

## Dimensions

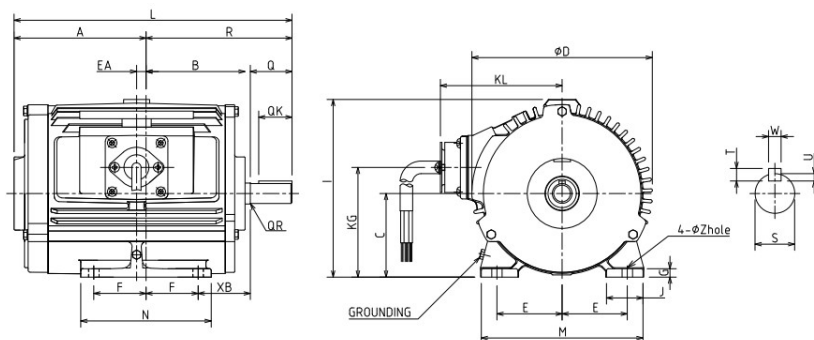


Fig. 1

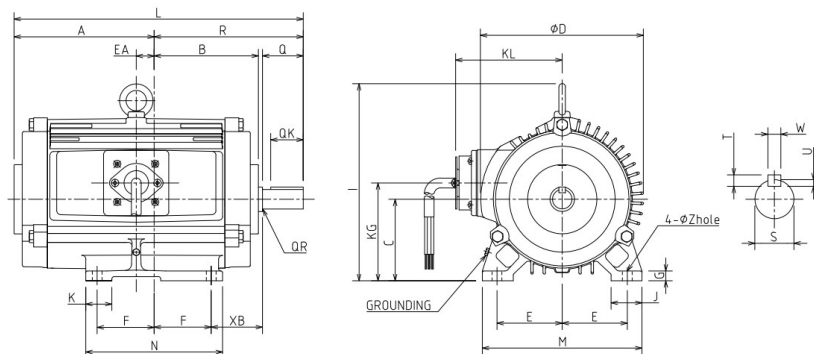


Fig. 2

| Frame | Fig. | A     | B     | C   | D   | E    | F    | G  | I   | J  | K  | L     | XB |
|-------|------|-------|-------|-----|-----|------|------|----|-----|----|----|-------|----|
| 80M   | 1    | 126.5 | 95    | 80  | 173 | 62.5 | 50   | 8  | 170 | 35 | -  | 266.5 | 50 |
| 90L   | 2    | 148.5 | 113.5 | 90  | 200 | 70   | 62.5 | 10 | 232 | 38 | 31 | 317   | 56 |
| 100L  | 2    | 172   | 128   | 100 | 200 | 80   | 70   | 12 | 242 | 38 | 32 | 355   | 63 |
| 112M  | 2    | 180   | 134   | 112 | 243 | 95   | 70   | 12 | 274 | 40 | 36 | 380   | 70 |

| Frame | Fig. | EA   | Q  | QK | QR  | S  | W | T | U   | M   | N   | R     | Z     |
|-------|------|------|----|----|-----|----|---|---|-----|-----|-----|-------|-------|
| 80M   | 1    | 9    | 40 | 32 | 0.5 | 19 | 6 | 6 | 3.5 | 155 | 125 | 140   | 4-Ø10 |
| 90L   | 2    | 17.5 | 50 | 40 | 0.5 | 24 | 8 | 7 | 4   | 172 | 149 | 168.5 | 4-Ø10 |
| 100L  | 2    | 22   | 50 | 40 | 0.5 | 24 | 8 | 7 | 4   | 196 | 168 | 183   | 4-Ø12 |
| 112M  | 2    | 23   | 60 | 45 | 1.5 | 28 | 8 | 7 | 4   | 220 | 168 | 200   | 4-Ø12 |

- (1) Tolerance of C dimensions is 0 ~ -0.5.  
 (2) Tolerance of S is stipulated by JIS B 0401 (dimensional tolerance and fit); Ø19-28mm: j6.  
 (3) Shaft end key and keyway conform with the parallel key and keyway of JIS B 1301

### Cautions

- ※ If you are using the motor on equipment that could seriously affect human lives or public functions (such as nuclear power control, traffic machinery, transport machinery, life-support system, chemical plant, various types of safety equipment, etc.), please contact us for consultation.  
 ※ Though Toshiba's motors are made under a strict quality control, due to the environment and conditions, there is a possibility of malfunctioning. Please create a failsafe or back-up system on the equipment design, if there is any possibility of serious damage when the motor's malfunction.  
 ※ The usage environment's limit range is stated in the catalog and manual. Please do not use it out of the usage environment range. It could cause accidents such as injuries and fire.  
 ※ Please read the manual's safety instructions, and use the motor correctly.  
 ※ If the motors are used for personal transports or elevators, please establish a protection device for safety of the equipping side.  
 ※ For further information, please contact your nearest Toshiba Representative. The information in this brochure is subject to change without notice.

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