

LOW VOLTAGE PREMIUM-EFFICIENCY MOTORS IEC Standard





AUTHORIZED DISTRIBUTOR

The distributor have been authorized to distribute the products of:

TOSHIBA INDUSTRIAL PRODUCTS ASIA CO., LTD.

1. CERTIFICATION



ISO 9001 - 2015





OHSAS18001 - 2007



Energy Label

ISO 14001 - 2015



NVLAP: National Voluntary Laboratory Accreditation Program



2. PROFILE

TOSHIBA

2.1 General Information

Toshiba is proud to introduce the new IEC motors product lines. This cutting-edge motor product line is designed to meet or exceed the competitive demands of the global market, as well as the requirements of the IEC 60034, while maintaining the high reliability and quality expected from Toshiba.

The IEC motor series is designed for severe duty applications. Building on over 20 years of success with the high efficiency motor series, the IEC features multiple new design enhancements that make it one of the lowest cost-of-ownership products in the industry.

Toshiba provides solutions and Global Supply Chain Management Systems (GSCMS) to meet the evolving needs of global customers.

2.2 Available Features

- IE3 Efficiency Levels per IEC 60034-30-1
- Meets or Exceeds Global Standard Specifications
- Aluminum Frame with Removable Base for 90 through 160 Frames
- Available Interchangeable Flange Options (B5/B35 and B14/34)
- IEC: Aluminum - 160 & Smaller Frame (except frame 80) Cast Iron - 160 & Larger Frame and Frame 80.

2.3 Suitable for various application

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2. PROFILE

2.4 Operational cost saving

High efficiency motor (IE3) can recover the price gap of initial purchase cost between IE3 motor and standard efficiency motor for a short period of time because of $30^{40\%}$ loss reduction. IE3 motor improved energy saving effects because of much lower running cost than that of the existing high efficiency motor.

*This is a result of a trial comparison between our standard efficiency motors and our high efficiency motor at rated output power. Loss reduction rate and payback period will depend on the usage condition.



The following calculation formula indicates annual electricity cost saved by use of high efficiency motor. (Unit: US\$ per year)



W = Input power difference between standard efficiency motor and high efficiency motor(kW)

C = Electric utility rate (US\$/kWh)

*Electric utility rate includes basic rate, taxes, etc., depending on contracted amount of electricity.

N = annual operation time (h/year)

<Example>

4poles-3.7kW-380V-50Hz, Operation hours 5,000h/year, Electricity rate 0.15US\$/kWh W=0.363kW (from the table below), C=0.15US\$/kWh, N=5,000h/year.

Saved Electricity Rate S=W×C×N=0.363×0.15×5,000=272.25US\$/year

| Output (kW) | Voltage (V) | Frequency (Hz) | Input pow standard ef efficienc | ver difference fficiency mot y (kW) (at 10 | e between or and high 0% load) |
|----------------|----------------|-------------------|---------------------------------------|--|--------------------------------------|
| | | | 2 Poles | 4 Poles | 6 Poles |
| | 380 | 50 | 0.040 | 0.047 | 0.116 |
| 0.75 | 400 | 50 | 0.060 | 0.047 | 0.112 |
| | 415 | 50 | 0.066 | 0.048 | 0.090 |
| | 380 | 50 | 0.111 | 0.136 | 0.307 |
| 1.5 | 400 | 50 | 0.082 | 0.106 | 0.273 |
| | 415 | 50 | 0.089 | 0.095 | 0.229 |
| | 380 | 50 | 0.143 | 0.236 | 0.478 |
| 2.2 | 400 | 50 | 0.129 | 0.201 | 0.460 |
| | 415 | 50 | 0.156 | 0.156 | 0.362 |
| | 380 | 50 | 0.265 | 0.363 | 0.455 |
| 3.7 | 400 | 50 | 0.309 | 0.355 | 0.497 |
| | 415 | 50 | 0.336 | 0.295 | 0.411 |
| | 380 | 50 | 0.292 | 0.421 | 0.636 |
| 5.5 | 400 | 50 | 0.341 | 0.383 | 0.675 |
| 1 | 415 | 50 | 0.407 | 0.322 | 0.577 |

| Output (kW) | Voltage (V) | Frequency (Hz) | Input pow standard ef efficienc | ver difference ficiency mot y (kW) (at 10 | e between or and high 10% load) |
|----------------|----------------|-------------------|---------------------------------------|---|---------------------------------------|
| | | | 2 Poles | 4 Poles | 6 Poles |
| | 380 | 50 | 0.391 | 0.528 | 0.376 |
| 7.5 | 400 | 50 | 0.442 | 0.432 | 0.407 |
| | 415 | 50 | 0.345 | 0.396 | 0.393 |
| | 380 | 50 | 0.460 | 0.744 | 0.632 |
| 11 | 400 | 50 | 0.384 | 0.797 | 0.678 |
| | 415 | 50 | 0.514 | 0.647 | 0.639 |
| | 380 | 50 | 0.491 | 1.090 | 0.271 |
| 15 | 400 | 50 | 0.512 | 1.210 | 0.257 |
| | 415 | 50 | 0.542 | 0.889 | 0.303 |
| | 380 | 50 | 0.464 | 0.794 | 0.608 |
| 18.5 | 400 | 50 | 0.404 | 0.791 | 0.636 |
| | 415 | 50 | 0.465 | 0.695 | 0.631 |
| | 380 | 50 | 1.110 | 0.810 | 0.590 |
| 22 | 400 | 50 | 1.150 | 0.832 | 0.563 |
| | 415 | 50 | 1.330 | 0.714 | 0.675 |

| Output (kW) | Voltage (V) | Frequency (Hz) | Input pow standard ef efficienc | ver difference fficiency moto y (kW) (at 10 | e between or and high 0% load) |
|----------------|----------------|-------------------|---------------------------------------|---|--------------------------------------|
| | | | 2 Poles | 4 Poles | 6 Poles |
| | 380 | 50 | 1.24 | 1.16 | 1.32 |
| 30 | 400 | 50 | 1.21 | 1.16 | 1.27 |
| | 415 | 50 | 1.16 | 1.11 | 1.21 |
| | 380 | 50 | 1.34 | 1.16 | 1.21 |
| 37 | 400 | 50 | 2.09 | 1.37 | 1.49 |
| | 415 | 50 | 2.03 | 1.23 | 1.22 |
| | 380 | 50 | 2.69 | 1.87 | 1.51 |
| 45 | 400 | 50 | 3.46 | 1.97 | 1.62 |
| | 415 | 50 | 3.25 | 1.80 | 1.49 |
| | 380 | 50 | 2.69 | 2.58 | - |
| 55 | 400 | 50 | 3.54 | 3.26 | - |
| | 415 | 50 | 3.17 | 2.70 | - |

2. PROFILE

2.5 Type -Form



2.6 Mounting Type



3. WIRING

Motor wiring connection



4. PERFORMANCE DATA

TOSHIBA

4.1 Characteristics and Performance Data: 2 Pole

<u>0.75kW ~ 5.5kW</u>

| Rat Out | ed put | Frame | Hz | Volts | Full Load | Full Load Speed | No Load Current | Lock Rotor Current | Lock Rotor Torque | Break Down Torque | | Efficiency | | P | ower Fact | or | Vibration | Noise | Moment of inertia | Approx. Weight |
|------------|-----------|-------|----|-------|--------------|-----------------------|-----------------------|--------------------------|-------------------------|-------------------------|--------------|-------------|-------------|--------------|-------------|-------------|-----------|-------|----------------------|-------------------|
| kW | НР | | | | Current | min-1 | А | % F/L | % F/L | % F/L | Full Load | 75% Load | 50% Load | Full Load | 75% Load | 50% Load | mm/s | dB(A) | Kg.m ² | kg |
| | | | | 380 | 1.60 | 2870 | 0.67 | 565 | 204 | 272 | 80.7 | 81.2 | 79.0 | 89.5 | 84.6 | 74.3 | | | | |
| 0.75 | 1 | 80M | 50 | 400 | 1.60 | 2870 | 0.81 | 611 | 229 | 301 | 80.9 | 81.5 | 79.4 | 86.4 | 79.7 | 67.6 | 1.2 | 54 | 0.0012 | 16 |
| | | | | 415 | 1.60 | 2875 | 0.94 | 632 | 249 | 322 | 81.2 | 81.8 | 80.0 | 82.7 | 75.1 | 62.1 | | | | |
| | | | | 380 | 2.30 | 2870 | 0.85 | 778 | 300 | 461 | 82.7 | 83.5 | 81.0 | 89.5 | 85.5 | 76.5 | | | | |
| 1.1 | 1.5 | 80M | 50 | 400 | 2.10 | 2875 | 0.89 | 865 | 338 | 508 | 83.0 | 83.9 | 81.2 | 88.7 | 84.1 | 74.5 | 1.2 | 54 | 0.0020 | 19 |
| | | | | 415 | 2.10 | 2875 | 0.93 | 924 | 367 | 545 | 83.5 | 84.1 | 81.4 | 87.4 | 82.3 | 71.9 | | | | |
| | | | | 380 | 3.10 | 2870 | 0.96 | 704 | 239 | 316 | 84.2 | 85.0 | 83.4 | 88.5 | 85.7 | 77.5 | | | | |
| 1.5 | 2 | 90L | 50 | 400 | 3.00 | 2875 | 1.18 | 766 | 271 | 348 | 84.5 | 85.3 | 83.9 | 86.4 | 81.5 | 71.2 | 1.2 | 54 | 0.0028 | 20 |
| | | | | 415 | 3.00 | 2875 | 1.44 | 797 | 295 | 371 | 84.8 | 85.6 | 84.1 | 83.8 | 76.9 | 65.0 | | | | |
| | | | | 380 | 4.40 | 2875 | 1.38 | 817 | 282 | 275 | 85.9 | 86.7 | 85.1 | 88.7 | 85.9 | 78.3 | | | | |
| 2.2 | 3 | 90L | 50 | 400 | 4.30 | 2875 | 1.66 | 895 | 319 | 304 | 86.2 | 86.9 | 85.5 | 86.8 | 82.4 | 72.7 | 1.2 | 54 | 0.0037 | 22.8 |
| | | | | 415 | 4.20 | 2880 | 2.03 | 935 | 348 | 324 | 86.5 | 87.1 | 85.8 | 84.5 | 78.1 | 66.7 | | | | |
| | | | | 380 | 6.00 | 2875 | 2.04 | 892 | 421 | 323 | 87.1 | 87.8 | 87.5 | 88.5 | 86.0 | 90.0 | | | | |
| 3 | 4 | 100L | 50 | 400 | 5.90 | 2880 | 2.36 | 976 | 476 | 356 | 87.5 | 88.2 | 86.0 | 86.7 | 82.5 | 73.1 | 1.2 | 54 | 0.0047 | 28 |
| | | | | 415 | 5.80 | 2880 | 2.88 | 1023 | 520 | 381 | 87.8 | 88.6 | 86.3 | 83.8 | 78.3 | 67.2 | | | | |
| | | | | 380 | 7.70 | 2890 | 1.93 | 815 | 274 | 344 | 88.1 | 89.2 | 88.0 | 91.5 | 90.0 | 85.5 | | | | |
| 4 | 5 | 112M | 50 | 400 | 7.30 | 2905 | 2.26 | 863 | 309 | 380 | 88.5 | 89.8 | 88.5 | 90.5 | 88.0 | 81.5 | 1.2 | 54 | 0.0087 | 34 |
| | | | | 415 | 7.10 | 2905 | 2.58 | 892 | 336 | 406 | 88.8 | 90.2 | 89.0 | 89.4 | 86.0 | 77.9 | | | | |
| | | | | 380 | 10.8 | 2890 | 2.88 | 638 | 240 | 307 | 89.2 | 89.7 | 88.3 | 89.0 | 86.7 | 80.4 | | | | |
| 5.5 | 7.5 | 1325 | 50 | 400 | 10.4 | 2905 | 3.50 | 696 | 271 | 337 | 89.5 | 90.0 | 88.4 | 86.8 | 83.2 | 74.7 | 1.2 | 58 | 0.0186 | 53 |
| | | | | 415 | 10.3 | 2905 | 4.09 | 736 | 294 | 359 | 89.7 | 90.2 | 88.6 | 84.7 | 80.1 | 70.0 | | | | |

4.1 Characteristics and Performance Data: 2 Pole

<u>7.5kW ~ 45kW</u>

| Rat Out | ed put | Frame | Hz | Volts | Full Load | Full Load Speed | No Load Curren <u>t</u> | Lock Rotor Curren <u>t</u> | Lock Rotor Torqu <u>e</u> | Break Down Torque | | Efficiency | | Po | ower Fact | or | Vibration | Noise | Moment inertia | Approx. Weight |
|------------|-----------|-------|----|-------|--------------|-----------------------|-------------------------------|----------------------------------|---------------------------------|-------------------------|--------------|-------------|-------------|--------------|-------------|-------------|-----------|-------|-------------------|-------------------|
| kW | НР | | | | Current | min-1 | А | % F/L | % F/L | % F/L | Full Load | 75% Load | 50% Load | Full Load | 75% Load | 50% Load | mm/s | dB(A) | Kg.m ² | kg |
| | | | | 380 | 14.7 | 2905 | 5.52 | 740 | 280 | 414 | 90.1 | 90.4 | 89.5 | 87.0 | 83.5 | 74.5 | | | | |
| 7.5 | 10 | 132M | 50 | 400 | 14.4 | 2915 | 6.27 | 795 | 315 | 455 | 90.3 | 90.7 | 90.0 | 84.0 | 78.4 | 67.1 | 1.2 | 58 | 0.0227 | 61 |
| | | | | 415 | 14.3 | 2920 | 7.31 | 834 | 342 | 483 | 90.5 | 90.9 | 90.3 | 81.5 | 75.0 | 62.9 | | | | |
| | | | | 380 | 21.5 | 2925 | 5.59 | 648 | 217 | 297 | 91.2 | 92.3 | 89.6 | 88.3 | 86.1 | 80.0 | | | | |
| 11 | 15 | 160M | 50 | 400 | 20.5 | 2935 | 6.67 | 707 | 243 | 326 | 91.5 | 92.5 | 89.8 | 86.4 | 83.0 | 74.8 | 1.6 | 61 | 0.0458 | 93 |
| | | | | 415 | 20.0 | 2940 | 7.69 | 748 | 264 | 347 | 91.7 | 92.8 | 90.0 | 84.5 | 80.1 | 70.4 | | | | |
| | | | | 380 | 29.0 | 2935 | 8.19 | 734 | 238 | 344 | 91.9 | 91.5 | 89.0 | 87.6 | 84.9 | 77.8 | | | | |
| 15 | 20 | 160M | 50 | 400 | 28.0 | 2945 | 9.99 | 799 | 268 | 377 | 91.9 | 91.7 | 89.3 | 85.3 | 81.3 | 72.2 | 1.6 | 69 | 0.0568 | 103 |
| | | | | 415 | 28.0 | 2945 | 116 | 843 | 291 | 401 | 91.9 | 91.8 | 89.5 | 83.1 | 78.0 | 67.6 | | | | |
| | | | | 380 | 35.0 | 2930 | 10.6 | 746 | 271 | 372 | 92.4 | 92.6 | 92.5 | 88.5 | 86.0 | 79.5 | | | | |
| 18.5 | 25 | 160L | 50 | 400 | 34.0 | 2940 | 12.2 | 822 | 306 | 408 | 92.4 | 92.9 | 92.6 | 86.5 | 83.0 | 74.5 | 1.6 | 70 | 0.0698 | 116 |
| | | | | 415 | 33.5 | 2940 | 13.2 | 871 | 333 | 437 | 92.4 | 92.9 | 92.6 | 84.9 | 80.0 | 69.7 | | | | |
| | | | | 380 | 41.0 | 2950 | 12.5 | 819 | 248 | 386 | 92.7 | 93.3 | 93.0 | 88.5 | 85.5 | 78.0 | | | | |
| 22 | 30 | 180M | 50 | 400 | 40.0 | 2955 | 14.5 | 913 | 279 | 424 | 93.0 | 93.5 | 93.2 | 86.7 | 82.7 | 73.6 | 1.6 | 71 | 0.1680 | 212 |
| | | | | 415 | 39.0 | 2960 | 16.2 | 968 | 305 | 454 | 93.2 | 93.6 | 93.2 | 84.8 | 79.9 | 69.6 | | | | |
| | | | | 380 | 58.0 | 2965 | 20.0 | 979 | 350 | 418 | 93.5 | 93.7 | 93.1 | 85.7 | 82.2 | 74.2 | | | | |
| 30 | 40 | 200L | 50 | 400 | 57.0 | 2965 | 24.5 | 1055 | 394 | 458 | 93.8 | 94.0 | 93.3 | 82.7 | 77.9 | 67.8 | 1.6 | 71 | 0.2775 | 304 |
| | | | | 415 | 56.0 | 2970 | 27.5 | 1110 | 429 | 488 | 94.0 | 94.2 | 93.6 | 80.4 | 74.7 | 63.4 | | | | |
| | | | | 380 | 70.0 | 2965 | 22.9 | 901 | 303 | 369 | 95.0 | 95.2 | 94.6 | 86.0 | 83.0 | 75.5 | | | | |
| 37 | 50 | 200L | 50 | 400 | 68.0 | 2965 | 27.4 | 991 | 342 | 404 | 95.2 | 95.4 | 94.7 | 84.0 | 79.7 | 70.2 | 1.6 | 71 | 0.3330 | 332 |
| | | | | 415 | 67.0 | 2970 | 31.3 | 1044 | 372 | 431 | 95.6 | 95.7 | 95.2 | 81.8 | 76.5 | 65.8 | | | | |
| | | | | 380 | 85.0 | 2960 | 27.8 | 879 | 285 | 350 | 94.4 | 94.8 | 94.4 | 86.0 | 83.0 | 75.5 | | | | |
| 45 | 60 | 2255 | 50 | 400 | 83.0 | 2965 | 32.8 | 976 | 322 | 384 | 94.6 | 94.8 | 94.2 | 84.0 | 79.6 | 69.9 | 1.6 | 71 | 0.3530 | 343 |
| | | | | 415 | 82.0 | 2965 | 37.1 | 1031 | 351 | 409 | 94.8 | 94.9 | 94.2 | 81.9 | 76.6 | 65.7 | | | | |

4.2 Characteristics and Performance Data: 4 Pole

<u>0.75kW ~ 5.5kW</u>

| Rate Outp | ed out | Frame | Hz | Volts | Full Load | Full Load Speed | No Load Current | Lock Rotor Current | Lock Rotor Torque | Break Down Torque | | Efficiency | | Р | ower Fac | tor | Vibration | Noise | Moment inertia | Approx. Weight |
|--------------|-----------|-------|----|-------|--------------|-----------------------|-----------------------|--------------------------|-------------------------|-------------------------|--------------|-------------|-------------|--------------|-------------|-------------|-----------|-------|-------------------|-------------------|
| kW | НР | | | | Current | min-1 | А | % F/L | % F/L | % F/L | Full Load | 75% Load | 50% Load | Full Load | 75% Load | 50% Load | mm/s | dB(A) | Kg.m ² | kg |
| | | | | 380 | 1.90 | 1435 | 1.12 | 663 | 367 | 498 | 85.0 | 85.4 | 83.1 | 72.5 | 65.0 | 52.5 | | | | |
| 0.75 | 1 | 80M | 50 | 400 | 1.90 | 1440 | 1.18 | 722 | 415 | 548 | 85.5 | 85.8 | 83.9 | 69.0 | 61.0 | 48.5 | 0.8 | 44 | 0.0042 | 20 |
| | | | | 415 | 1.80 | 1445 | 1.25 | 749 | 453 | 586 | 86.0 | 86.2 | 84.2 | 68.2 | 59.6 | 47.1 | | | | |
| | | | | 380 | 2.60 | 1430 | 1.13 | 615 | 221 | 266 | 84.0 | 85.4 | 83.1 | 79.8 | 75.3 | 65.6 | | | | |
| 1.1 | 1.5 | 90L | 50 | 400 | 2.50 | 1440 | 1.31 | 671 | 252 | 293 | 84.5 | 85.5 | 83.5 | 77.3 | 71.6 | 60.5 | 0.8 | 44 | 0.0049 | 21 |
| | | | | 415 | 2.50 | 1445 | 1.48 | 704 | 275 | 313 | 85.0 | 85.6 | 83.8 | 74.7 | 68.1 | 56.2 | | | | |
| | | | | 380 | 3.50 | 1435 | 1.52 | 608 | 221 | 272 | 85.3 | 86.9 | 86.1 | 79.8 | 75.1 | 65.1 | | | | |
| 1.5 | 2 | 90L | 50 | 400 | 3.40 | 1445 | 1.81 | 658 | 251 | 299 | 85.3 | 86.7 | 85.0 | 76.6 | 70.6 | 59.1 | 0.8 | 44 | 0.0055 | 21 |
| | | | | 415 | 3.30 | 1450 | 2.11 | 686 | 274 | 318 | 85.3 | 86.4 | 84.9 | 73.6 | 66.5 | 57.9 | | | | |
| | | | | 380 | 5.20 | 1460 | 2.90 | 925 | 361 | 433 | 86.7 | 88.4 | 86.5 | 73.7 | 67.3 | 55.6 | | | | |
| 2.2 | 3 | 100L | 50 | 400 | 5.20 | 1465 | 3.45 | 974 | 410 | 475 | 86.7 | 88.0 | 86.1 | 69.4 | 61.8 | 49.4 | 0.8 | 45 | 0.0100 | 30 |
| | | | | 415 | 5.10 | 1465 | 4.11 | 990 | 448 | 505 | 86.7 | 87.4 | 85.5 | 65.3 | 57.0 | 44.4 | | | | |
| | | | | 380 | 6.60 | 1445 | 3.25 | 755 | 296 | 342 | 87.7 | 88.9 | 88.7 | 79.0 | 74.5 | 64.5 | | | | |
| 3 | 4 | 100L | 50 | 400 | 6.50 | 1450 | 3.82 | 835 | 336 | 377 | 87.7 | 88.7 | 87.0 | 76.2 | 70.2 | 58.7 | 0.8 | 45 | 0.0104 | 30 |
| | | | | 415 | 6.40 | 1455 | 4.68 | 862 | 368 | 402 | 87.7 | 88.4 | 86.1 | 72.6 | 65.5 | 53.2 | | | | |
| | | | | 380 | 8.60 | 1455 | 3.92 | 873 | 322 | 424 | 89.6 | 90.5 | 90.4 | 80.5 | 76.0 | 67.0 | | | | |
| 4 | 5 | 112M | 50 | 400 | 8.10 | 1455 | 4.79 | 946 | 367 | 467 | 90.3 | 91.3 | 91.2 | 77.4 | 71.8 | 60.6 | 0.8 | 54 | 0.0210 | 39 |
| | | | | 415 | 8.00 | 1460 | 5.57 | 990 | 402 | 500 | 90.6 | 91.5 | 91.2 | 74.6 | 67.9 | 59.7 | | | | |
| | | | | 380 | 11.7 | 1460 | 5.38 | 810 | 371 | 425 | 89.6 | 89.8 | 87.8 | 81.3 | 76.6 | 66.5 | | | | |
| 5.5 | 7.5 | 1325 | 50 | 400 | 11.5 | 1465 | 6.43 | 867 | 419 | 468 | 89.6 | 89.7 | 87.3 | 78.0 | 71.9 | 60.3 | 0.8 | 54 | 0.0386 | 62 |
| | | | | 415 | 11.4 | 1470 | 7.36 | 904 | 456 | 501 | 89.6 | 89.7 | 87.9 | 75.1 | 68.0 | 55.5 | | | | |

4.2 Characteristics and Performance Data: 4 Pole

<u>7.5kW ~ 45kW</u>

| Rat Out | ed put | Frame | Hz | Volts | Full Load | Full Load Speed | No Load Current | Lock Rotor Current | Lock Rotor Torque | Break Down Torque | | Efficiency | | P | ower Fact | or | Vibration | Noise | Moment inertia | Approx. Weight |
|------------|-----------|-------|----|-------|--------------|-----------------------|-----------------------|--------------------------|-------------------------|-------------------------|--------------|-------------|-------------|--------------|-------------|-------------|-----------|-------|-------------------|-------------------|
| kW | НР | | | | Current | min-1 | А | % F/L | % F/L | % F/L | Full Load | 75% Load | 50% Load | Full Load | 75% Load | 50% Load | mm/s | dB(A) | Kg.m ² | kg |
| | | | | 380 | 15.2 | 1460 | 6.40 | 761 | 350 | 400 | 90.4 | 91.5 | 91.3 | 82.5 | 79.0 | 70.0 | | | | |
| 7.5 | 10 | 132S | 50 | 400 | 14.9 | 1465 | 7.40 | 849 | 396 | 441 | 91.1 | 91.9 | 91.6 | 80.6 | 75.5 | 65.0 | 1.2 | 54 | 0.0484 | 70 |
| | | | | 415 | 14.8 | 1465 | 8.48 | 891 | 432 | 473 | 91.4 | 92.0 | 91.6 | 78.2 | 72.1 | 60.4 | | | | |
| | | | | 380 | 23.0 | 1470 | 10.0 | 843 | 309 | 334 | 91.7 | 92.3 | 91.7 | 80.1 | 75.6 | 65.9 | | | | |
| 11 | 15 | 160M | 50 | 400 | 23.0 | 1470 | 12.0 | 906 | 349 | 368 | 92.0 | 92.2 | 91.2 | 77.0 | 71.2 | 59.9 | 1.2 | 60 | 0.0875 | 102 |
| | | | | 415 | 22.5 | 1475 | 13.6 | 947 | 380 | 393 | 92.0 | 92.2 | 91.5 | 74.3 | 67.6 | 55.4 | | | | |
| | | | | 380 | 31.0 | 1465 | 11.4 | 768 | 296 | 351 | 92.1 | 92.7 | 92.6 | 82.5 | 79.0 | 70.5 | | | | |
| 15 | 20 | 160L | 50 | 400 | 30.0 | 1470 | 13.3 | 870 | 335 | 387 | 92.4 | 92.8 | 92.4 | 80.0 | 75.0 | 65.0 | 1.2 | 60 | 0.1130 | 119 |
| | | | | 415 | 29.0 | 1470 | 15.3 | 917 | 365 | 413 | 92.6 | 93.1 | 92.7 | 77.8 | 72.2 | 61.0 | | | | |
| | | | | 380 | 38.0 | 1470 | 16.4 | 924 | 201 | 345 | 92.6 | 92.7 | 91.0 | 81.9 | 77.0 | 66.7 | | | | |
| 18.5 | 25 | 180M | 50 | 400 | 37.0 | 1475 | 18.2 | 1004 | 227 | 378 | 92.6 | 92.7 | 91.0 | 79.4 | 73.5 | 61.9 | 1.2 | 62 | 0.2100 | 206 |
| | | | | 415 | 36.0 | 1475 | 20.0 | 1057 | 248 | 404 | 92.6 | 92.7 | 91.0 | 77.2 | 70.5 | 58.1 | | | | |
| | | | | 380 | 43.0 | 1465 | 15.9 | 817 | 172 | 304 | 92.7 | 93.0 | 91.3 | 84.3 | 80.8 | 72.3 | | | | |
| 22 | 30 | 180L | 50 | 400 | 42.0 | 1470 | 17.6 | 896 | 194 | 334 | 92.8 | 93.1 | 91.4 | 82.5 | 77.9 | 68.0 | 1.2 | 62 | 0.2240 | 212 |
| | | | | 415 | 41.0 | 1470 | 19.3 | 951 | 212 | 357 | 92.9 | 93.2 | 91.5 | 80.7 | 75.4 | 64.4 | | | | |
| | | | | 380 | 59.0 | 1475 | 22.9 | 886 | 188 | 354 | 93.6 | 94.2 | 94.1 | 83.8 | 80.4 | 72.1 | | | | |
| 30 | 40 | 200L | 50 | 400 | 58.0 | 1480 | 26.2 | 968 | 213 | 389 | 93.8 | 94.1 | 93.8 | 81.8 | 77.2 | 67.3 | 1.2 | 62 | 0.4841 | 294 |
| | | | | 415 | 57.0 | 1480 | 29.5 | 1026 | 232. | 415 | 94.2 | 94.7 | 94.3 | 80.0 | 74.6 | 63.6 | | | | |
| | | | | 380 | 71.0 | 1480 | 27.8 | 1000 | 213 | 383 | 93.9 | 94.1 | 92.3 | 84.2 | 80.6 | 72.2 | | | | |
| 37 | 50 | 2255 | 50 | 400 | 70.0 | 1480 | 32.2 | 1091 | 242 | 420 | 93.9 | 94.1 | 92.3 | 82.0 | 77.3 | 67.2 | 1.2 | 63 | 0.5150 | 344 |
| | | | | 415 | 68.0 | 1480 | 34.4 | 1165 | 264 | 449 | 93.9 | 94.1 | 92.3 | 80.7 | 75.4 | 64.5 | | | | |
| | | | | 380 | 86.0 | 1480 | 31.7 | 989 | 216 | 381 | 94.7 | 94.9 | 94.5 | 84.5 | 82.5 | 76.5 | | | | |
| 45 | 60 | 2255 | 50 | 400 | 84.0 | 1480 | 37.1 | 1110 | 246 | 419 | 94.9 | 95.2 | 94.8 | 82.7 | 78.3 | 68.6 | 1.2 | 63 | 0.6200 | 374 |
| | | | | 415 | 82.0 | 1480 | 40.8 | 1178 | 268 | 448 | 95.0 | 95.2 | 94.7 | 81.0 | 75.8 | 65.0 | | | | |

4. PERFORMANCE DATA

4. PERFORMANCE DATA

4.3 Characteristics and Performance Data: 6 Pole

<u>0.75kW ~ 4kW</u>

| Rat Out | ed out | Frame | Hz | Volts | Full Load | Full Load Speed | No Load Current | Lock Rotor Current | Lock Rotor Torque | Break Down Torque | | Efficiency | | P | ower Fact | or | Vibration | Noise | Moment inertia | Approx. Weight |
|------------|-----------|-------|----|-------|--------------|-----------------------|-----------------------|--------------------------|-------------------------|-------------------------|--------------|-------------|-------------|--------------|-------------|-------------|-----------|-------|-------------------|-------------------|
| kW | НР | | | | Current | min-1 | Α | % F/L | % F/L | % F/L | Full Load | 75% Load | 50% Load | Full Load | 75% Load | 50% Load | mm/s | dB(A) | Kg.m ² | kg |
| | | | | 380 | 2.10 | 960 | 1.27 | 708 | 446 | 433 | 79.3 | 80.8 | 78.9 | 68.8 | 61.9 | 50.3 | | | | |
| 0.75 | 1 | 90L | 50 | 400 | 2.00 | 960 | 1.45 | 757 | 507 | 475 | 79.6 | 80.6 | 78.4 | 65.6 | 57.9 | 49.6 | 0.8 | 46 | 0.0064 | 19.5 |
| | | | | 415 | 2.00 | 965 | 1.64 | 781 | 556 | 506 | 79.9 | 80.4 | 78.0 | 62.6 | 54.5 | 42.8 | | | | |
| | | | | 380 | 3.00 | 970 | 2.00 | 920 | 594 | 515 | 81.0 | 82.8 | 81.0 | 66.0 | 60.5 | 50.0 | | | | |
| 1.1 | 1.5 | 90L | 50 | 400 | 2.90 | 970 | 2.05 | 1025 | 680 | 564 | 81.3 | 82.9 | 81.3 | 63.7 | 55.7 | 43.9 | 0.8 | 46 | 0.0123 | 28 |
| | | | | 415 | 2.90 | 975 | 2.20 | 1069 | 748 | 602 | 81.5 | 83.0 | 81.5 | 61.3 | 53.0 | 41.2 | | | | |
| | | | | 380 | 3.90 | 965 | 2.40 | 674 | 284 | 495 | 86.4 | 86.6 | 85.0 | 69.0 | 61.5 | 49.5 | | | | |
| 1.5 | 2 | 100L | 50 | 400 | 3.80 | 970 | 2.61 | 751 | 325 | 542 | 86.7 | 86.9 | 85.1 | 66.1 | 58.3 | 46.1 | 0.8 | 46 | 0.0141 | 32 |
| | | | | 415 | 3.80 | 970 | 2.82 | 785 | 358 | 579 | 86.8 | 87.0 | 85.2 | 63.6 | 55.4 | 47.1 | | | | |
| | | | | 380 | 5.20 | 965 | 2.70 | 899 | 427 | 537 | 89.3 | 89.8 | 89.1 | 73.5 | 68.5 | 58.5 | | | | |
| 2.2 | 3 | 112M | 50 | 400 | 5.10 | 970 | 2.84 | 1008 | 494 | 590 | 89.7 | 90.0 | 89.3 | 71.6 | 65.1 | 53.3 | 0.8 | 46 | 0.0292 | 46 |
| | | | | 415 | 5.00 | 970 | 2.98 | 1075 | 547 | 630 | 90.0 | 90.3 | 89.5 | 70.0 | 62.9 | 50.9 | | | | |
| | | | | 380 | 6.80 | 965 | 3.40 | 857 | 426 | 418 | 88.8 | 89.5 | 88.8 | 75.5 | 70.5 | 59.5 | | | | |
| 3 | 4 | 132S | 50 | 400 | 6.60 | 970 | 3.57 | 973 | 485 | 459 | 89.3 | 89.8 | 88.9 | 74.4 | 68.2 | 56.7 | 0.8 | 48 | 0.0403 | 55 |
| | | | | 415 | 6.50 | 975 | 3.73 | 1038 | 532 | 490 | 89.7 | 90.1 | 89.0 | 73.0 | 66.2 | 54.3 | | | | |
| | | | | 380 | 9.00 | 965 | 4.30 | 859 | 386 | 404 | 88.5 | 89.6 | 89.4 | 76.5 | 72.0 | 61.5 | | | | |
| 4 | 5 | 132M | 50 | 400 | 8.70 | 970 | 4.53 | 991 | 440 | 442 | 89.0 | 90.0 | 89.6 | 75.6 | 70.0 | 59.0 | 0.8 | 48 | 0.0480 | 62 |
| | | | | 415 | 8.40 | 970 | 4.68 | 1061 | 483 | 473 | 89.6 | 90.4 | 89.8 | 74.4 | 68.2 | 56.7 | | | | |

4. PERFORMANCE DATA

4.3 Characteristics and Performance Data: 6 Pole

<u>5.5kW ~ 30kW</u>

| Rat Out | ed out | Frame | Hz | Volts | Full Load | Full Load Speed | No Load Current | Lock Rotor Current | Lock Rotor Torque | Break Down Torque | | Efficiency | | P | ower Fact | tor | Vibration | Noise | Moment inertia | Approx. Weight |
|------------|-----------|-------|----|-------|--------------|-----------------------|-----------------------|--------------------------|-------------------------|-------------------------|--------------|-------------|-------------|--------------|-------------|-------------|-----------|-------|-------------------|-------------------|
| kW | НР | | | | Current | min-1 | А | % F/L | % F/L | % F/L | Full Load | 75% Load | 50% Load | Full Load | 75% Load | 50% Load | mm/s | dB(A) | Kg.m ² | kg |
| | | | | 380 | 12.0 | 965 | 5.40 | 895 | 411 | 374 | 89.7 | 90.6 | 90.3 | 78.0 | 74.0 | 64.5 | | | | |
| 5.5 | 7.5 | 132M | 50 | 400 | 11.5 | 970 | 5.66 | 1025 | 470 | 409 | 90.1 | 90.8 | 90.6 | 77.2 | 72.1 | 61.6 | 0.8 | 48 | 0.0672 | 75 |
| | | | | 415 | 11.2 | 970 | 5.95 | 1098 | 516 | 437 | 90.7 | 91.5 | 91.1 | 76.0 | 70.3 | 59.1 | | | | |
| | | | | 380 | 16.0 | 965 | 6.69 | 810 | 402 | 299 | 89.1 | 89.9 | 88.7 | 80.1 | 76.5 | 67.7 | | | | |
| 7.5 | 10 | 160M | 50 | 400 | 15.3 | 965 | 7.12 | 900 | 458 | 329 | 89.3 | 90.3 | 88.9 | 79.0 | 74.6 | 64.7 | 1.2 | 52 | 0.1020 | 95 |
| | | | | 415 | 15.0 | 970 | 7.85 | 958 | 502 | 353 | 89.5 | 90.4 | 89.0 | 77.4 | 72.1 | 61.3 | | | | |
| | | | | 380 | 23.0 | 965 | 9.40 | 820 | 421 | 304 | 90.4 | 91.2 | 91.0 | 80.0 | 76.5 | 68.0 | | | | |
| 11 | 15 | 160L | 50 | 400 | 22.5 | 965 | 10.4 | 940 | 479 | 334 | 90.8 | 91.6 | 91.3 | 79.2 | 74.8 | 65.0 | 1.2 | 52 | 0.1410 | 115 |
| | | | | 415 | 22.0 | 970 | 11.6 | 999 | 526 | 359 | 91.0 | 92.0 | 91.5 | 77.0 | 72.0 | 61.0 | | | | |
| | | | | 380 | 32.0 | 970 | 13.1 | 1166 | 245 | 272 | 90.6 | 91.7 | 91.0 | 79.7 | 75.5 | 66.0 | | | | |
| 15 | 20 | 180L | 50 | 400 | 31.0 | 975 | 14.8 | 1272 | 277 | 297 | 91.1 | 92.0 | 91.4 | 77.0 | 72.0 | 61.0 | 1.2 | 55 | 0.2490 | 193 |
| | | | | 415 | 31.0 | 975 | 16.6 | 1340 | 302 | 314 | 91.6 | 92.7 | 92.0 | 75.3 | 69.1 | 57.3 | | | | |
| | | | | 380 | 38.0 | 975 | 13.7 | 581 | 238 | 321 | 91.7 | 92.1 | 91.0 | 82.2 | 78.8 | 70.4 | | | | |
| 18.5 | 25 | 200L | 50 | 400 | 36.0 | 975 | 14.4 | 643 | 267 | 351 | 91.9 | 92.4 | 91.2 | 81.4 | 77.2 | 67.7 | 1.2 | 55 | 0.5840 | 278 |
| | | | | 415 | 35.0 | 975 | 15.2 | 690 | 292 | 374 | 92.1 | 92.6 | 91.4 | 80.4 | 75.6 | 65.4 | | | | |
| | | | | 380 | 45.0 | 975 | 16.5 | 612 | 257 | 340 | 92.4 | 93.3 | 93.0 | 82.0 | 78.0 | 69.0 | | | | |
| 22 | 30 | 200L | 50 | 400 | 43.0 | 975 | 18.0 | 692 | 291 | 371 | 93.0 | 93.8 | 93.5 | 81.0 | 76.4 | 66.4 | 1.2 | 55 | 0.6710 | 291 |
| | | | | 415 | 42.0 | 980 | 19.1 | 739 | 318 | 395 | 93.3 | 94.3 | 93.8 | 79.7 | 74.5 | 63.8 | | | | |
| | | | | 380 | 61.0 | 980 | 26.6 | 608 | 297 | 389 | 93.9 | 94.4 | 94.1 | 80.0 | 75.0 | 65.0 | | | | |
| 30 | 40 | 225S | 50 | 400 | 59.0 | 980 | 29.1 | 666 | 336 | 424 | 94.3 | 94.6 | 94.2 | 78.4 | 72.8 | 61.7 | 1.2 | 55 | 0.7880 | 352 |
| | | | | 415 | 58.0 | 985 | 31.1 | 706 | 368 | 450 | 94.5 | 94.8 | 94.4 | 76.7 | 70.4 | 58.6 | | | | |



5. DIMENSION

5.1 Foot-mounted/IM B3.



| Frame Size | Fig | н | Α | B(*) | С | E | К | L | HE | HD | HA | AA | AB | AC | BB |
|------------|-----|-----|-----|------|-----|-----|------|-----|-----|-----|----|----|-----|-----|-----|
| 80M | 1 | 80 | 125 | 100 | 50 | 40 | 10 | 303 | 119 | 244 | 9 | 40 | 157 | 179 | 135 |
| 90L | 1 | 90 | 140 | 125 | 56 | 50 | 10 | 362 | 133 | 268 | 10 | 40 | 176 | 185 | 165 |
| 100L | 2 | 100 | 160 | 140 | 63 | 60 | 12 | 370 | 132 | 277 | 12 | 40 | 200 | 199 | 180 |
| 112M | 2 | 112 | 190 | 140 | 70 | 60 | 12 | 385 | 151 | 309 | 12 | 40 | 220 | 240 | 190 |
| 132S | 2 | 132 | 216 | 140 | 89 | 80 | 12 | 450 | 197 | 393 | 15 | 50 | 260 | 284 | 205 |
| 132M | 2 | 132 | 216 | 178 | 89 | 80 | 12 | 488 | 197 | 393 | 15 | 50 | 260 | 284 | 240 |
| 160M | 2 | 160 | 254 | 210 | 108 | 110 | 14.5 | 613 | 190 | 440 | 18 | 60 | 308 | 318 | 265 |
| 160L | 2 | 160 | 254 | 254 | 108 | 110 | 14.5 | 613 | 190 | 440 | 18 | 60 | 308 | 318 | 310 |
| 180M | 3 | 180 | 279 | 241 | 121 | 110 | 14.5 | 755 | 283 | 530 | 20 | 60 | 324 | 390 | 315 |
| 180L | 3 | 180 | 279 | 279 | 121 | 110 | 14.5 | 755 | 283 | 530 | 20 | 60 | 324 | 390 | 350 |
| 200L | 4 | 200 | 318 | 305 | 133 | 110 | 18.5 | 853 | 303 | 570 | 20 | 80 | 378 | 450 | 380 |
| 2255 | 4 | 225 | 356 | 286 | 149 | 140 | 18.5 | 885 | 333 | 625 | 25 | 84 | 417 | 440 | 380 |

Note: Dimension B* only apply for frame size 180L. Note: All dimension is mm.

5. DIMENSION

5.1 Foot-mounted/IM B3.



| | | C | CD | - | FD | DU | FC | Веа | ring |
|--------------|------|------|-----------|-----|-----|----------|----|-----------|--------------------|
| Frame Size | U | G | GD | - F | ED | | EG | Drive End | Opposite drive End |
| 80M | 19j6 | 15.5 | 6 | 6 | 32 | M6X1.00 | 16 | 6204ZZC3 | 6204ZZC3 |
| 90L | 24j6 | 20 | 7 | 8 | 40 | M8X1.25 | 19 | 6205ZZC3 | 6205ZZC3 |
| 100L | 28j6 | 24 | 7 | 8 | 45 | M10X1.50 | 22 | 6206ZZC3 | 6205ZZC3 |
| 112M | 28j6 | 24 | 7 | 8 | 45 | M10X1.50 | 22 | 6207ZZC3 | 6206ZZC3 |
| 132S | 38k6 | 33 | 8 | 10 | 63 | M12X1.75 | 28 | 6308ZZC3 | 6208ZZC3 |
| 132M | 38k6 | 33 | 8 | 10 | 63 | M12X1.75 | 28 | 6308ZZC3 | 6208ZZC3 |
| 160M | 42k6 | 37 | 8 | 12 | 90 | M16X2.00 | 36 | 6310ZZC3 | 6208ZZC3 |
| 160L | 42k6 | 37 | 8 | 12 | 90 | M16X2.00 | 36 | 6310ZZC3 | 6208ZZC3 |
| 180M | 48k6 | 42.5 | 9 | 14 | 90 | M16X2.00 | 36 | 6312ZZC3 | 6310ZZC3 |
| 180L | 48k6 | 42.5 | 9 | 14 | 90 | M16X2.00 | 36 | 6312ZZC3 | 6310ZZC3 |
| 200L | 55m6 | 49 | 10 | 16 | 90 | M20X2.50 | 42 | 6313C3 | 6312C3 |
| 225S (2P) | 55m6 | 49 | 10 | 16 | 90 | M20X2.50 | 42 | 6313C3 | 6312C3 |
| 225S (4P-6P) | 60m6 | 53 | 11 | 18 | 110 | M20X2.50 | 42 | 6313C3 | 6312C3 |



5. DIMENSION

5.2 Footed, Flange-mounted /IM B35.



| Frame Size | Fig | Н | Α | B(*) | С | E | K | L | HE | HD | HA | AA | AB | AC | BB |
|------------|-----|-----|-----|------|-----|-----|------|-----|-----|-----|----|----|-----|-----|-----|
| 80M | 1 | 80 | 125 | 100 | 50 | 40 | 10 | 303 | 119 | 244 | 9 | 40 | 157 | 179 | 135 |
| 90L | 2 | 90 | 140 | 125 | 56 | 50 | 10 | 362 | 133 | 268 | 10 | 40 | 176 | 185 | 165 |
| 100L | 3 | 100 | 160 | 140 | 63 | 60 | 12 | 370 | 132 | 277 | 12 | 40 | 200 | 199 | 180 |
| 112M | 3 | 112 | 190 | 140 | 70 | 60 | 12 | 385 | 151 | 309 | 12 | 40 | 220 | 240 | 190 |
| 132S | 3 | 132 | 216 | 140 | 89 | 80 | 12 | 450 | 197 | 393 | 15 | 50 | 260 | 284 | 205 |
| 132M | 3 | 132 | 216 | 178 | 89 | 80 | 12 | 488 | 197 | 393 | 15 | 50 | 260 | 284 | 240 |
| 160M | 3 | 160 | 254 | 210 | 108 | 110 | 14.5 | 613 | 190 | 440 | 18 | 60 | 308 | 318 | 265 |
| 160L | 3 | 160 | 254 | 254 | 108 | 110 | 14.5 | 613 | 190 | 440 | 18 | 60 | 308 | 318 | 310 |
| 180M | 4 | 180 | 279 | 241 | 121 | 110 | 14.5 | 755 | 283 | 530 | 20 | 60 | 324 | 390 | 315 |
| 180L | 4 | 180 | 279 | 279 | 121 | 110 | 14.5 | 755 | 283 | 530 | 20 | 60 | 324 | 390 | 350 |
| 200L | 4 | 200 | 318 | 305 | 133 | 110 | 18.5 | 853 | 303 | 570 | 20 | 80 | 378 | 450 | 380 |
| 2255 | 5 | 225 | 356 | 286 | 149 | 140 | 18.5 | 885 | 333 | 625 | 25 | 84 | 417 | 440 | 380 |

Note: Distance from the mounting surface of the flange to the shoulder on the shaft is 0 mm. Note: Dimension B* only apply for frame size 180L.

Note: All dimension is mm.

5. DIMENSION

5.2 Footed, Flange-mounted /IM B35.





| Frame | | | | | | | | | | | | | | Bea | ring |
|--------------|------|------|----|----|-----|----------|----|-----|-------|------|-----|------|-----|-----------|-----------------------|
| Size | D | G | GD | F | EB | DH | EG | Р | N | LA | T | S | Μ | Drive End | Opposite Drive End |
| 80M | 19j6 | 15.5 | 6 | 6 | 32 | M6X1.00 | 16 | 200 | 130j6 | 10 | 3.5 | 12 | 165 | 6204ZZC3 | 6204ZZC3 |
| 90L | 24j6 | 20 | 7 | 8 | 40 | M8X1.25 | 19 | 200 | 130j6 | 10 | 3.5 | 12 | 165 | 6205ZZC3 | 6205ZZC3 |
| 100L | 28j6 | 24 | 7 | 8 | 45 | M10X1.50 | 22 | 250 | 180j6 | 11 | 4 | 14.5 | 215 | 6206ZZC3 | 6205ZZC3 |
| 112M | 28j6 | 24 | 7 | 8 | 45 | M10X1.50 | 22 | 250 | 180j6 | 11 | 4 | 14.5 | 215 | 6207ZZC3 | 6206ZZC3 |
| 132S | 38k6 | 33 | 8 | 10 | 63 | M12X1.75 | 28 | 300 | 230j6 | 12 | 4 | 14.5 | 265 | 6308ZZC3 | 6208ZZC3 |
| 132M | 38k6 | 33 | 8 | 10 | 63 | M12X1.75 | 28 | 300 | 230j6 | 12 | 4 | 14.5 | 265 | 6308ZZC3 | 6208ZZC3 |
| 160M | 42k6 | 37 | 8 | 12 | 90 | M16X2.00 | 36 | 350 | 250j6 | 14 | 5 | 18.5 | 300 | 6310ZZC3 | 6208ZZC3 |
| 160L | 42k6 | 37 | 8 | 12 | 90 | M16X2.00 | 36 | 350 | 250j6 | 14 | 5 | 18.5 | 300 | 6310ZZC3 | 6208ZZC3 |
| 180M | 48k6 | 42.5 | 9 | 14 | 90 | M16X2.00 | 36 | 350 | 250j6 | 12 | 5 | 18.5 | 300 | 6312ZZC3 | 6310ZZC3 |
| 180L | 48k6 | 42.5 | 9 | 14 | 90 | M16X2.00 | 36 | 350 | 250j6 | 12 | 5 | 18.5 | 300 | 6312ZZC3 | 6310ZZC3 |
| 200L | 55m6 | 49 | 10 | 16 | 90 | M20X2.50 | 42 | 400 | 300j6 | 18.5 | 5 | 18.5 | 350 | 6313C3 | 6312C3 |
| 225S (2P) | 55m6 | 49 | 10 | 16 | 90 | M20X2.50 | 42 | 450 | 350j6 | 20 | 5 | 18.5 | 400 | 6313C3 | 6312C3 |
| 225S (4P-6P) | 60m6 | 53 | 11 | 18 | 110 | M20X2.50 | 42 | 450 | 350j6 | 20 | 5 | 18.5 | 400 | 6313C3 | 6312C3 |

5. DIMENSION

5.3 Footless, Flange-mounted /IM B5.



| Frame Size | Fig | E | L | Р | N | LA | Т | S | М | HE | AC | AD |
|------------|-----|-----|-----|-----|-------|------|-----|------|-----|-----|-----|-----|
| 80M | 1 | 40 | 303 | 200 | 130j6 | 10 | 3.5 | 12 | 165 | 119 | 179 | 164 |
| 90L | 2 | 50 | 362 | 200 | 130j6 | 10 | 3.5 | 12 | 165 | 133 | 185 | 178 |
| 100L | 3 | 60 | 370 | 250 | 180j6 | 11 | 4 | 14.5 | 215 | 132 | 199 | 178 |
| 112M | 3 | 60 | 385 | 250 | 180j6 | 11 | 4 | 14.5 | 215 | 151 | 240 | 197 |
| 132S | 3 | 80 | 450 | 300 | 230j6 | 12 | 4 | 14.5 | 265 | 197 | 284 | 261 |
| 132M | 3 | 80 | 488 | 300 | 230j6 | 12 | 4 | 14.5 | 265 | 197 | 284 | 261 |
| 160M | 3 | 110 | 613 | 350 | 250j6 | 14 | 5 | 18.5 | 300 | 190 | 318 | 280 |
| 160L | 3 | 110 | 613 | 350 | 250j6 | 14 | 5 | 18.5 | 300 | 190 | 318 | 280 |
| 180M | 3 | 110 | 755 | 350 | 250j6 | 12 | 5 | 18.5 | 300 | 283 | 390 | 350 |
| 180L | 3 | 110 | 755 | 350 | 250j6 | 12 | 5 | 18.5 | 300 | 283 | 390 | 350 |
| 200L | 3 | 110 | 853 | 400 | 300j6 | 18.5 | 5 | 18.5 | 350 | 303 | 450 | 401 |
| 2255 | 4 | 140 | 885 | 450 | 350j6 | 20 | 5 | 18.5 | 400 | 333 | 440 | 401 |

Note: Distance from the mounting surface of the flange to the shoulder on the shaft is 0 mm. Note: All dimension is mm.

5. DIMENSION

5.3 Footless, Flange-mounted/IM B5.



| | | | | Bearing | | | | | |
|--------------|------|------|----|---------|-----|----------|----|-----------|-----------------------|
| Frame Size | D | G | GD | F | EB | DH | EG | Drive End | Opposite drive End |
| 80M | 19j6 | 15.5 | 6 | 6 | 32 | M6X1.00 | 16 | 6204ZZC3 | 6204ZZC3 |
| 90L | 24j6 | 20 | 7 | 8 | 40 | M8X1.25 | 19 | 6205ZZC3 | 6205ZZC3 |
| 100L | 28j6 | 24 | 7 | 8 | 45 | M10X1.50 | 22 | 6206ZZC3 | 6205ZZC3 |
| 112M | 28j6 | 24 | 7 | 8 | 45 | M10X1.50 | 22 | 6207ZZC3 | 6206ZZC3 |
| 132S | 38k6 | 33 | 8 | 10 | 63 | M12X1.75 | 28 | 6308ZZC3 | 6208ZZC3 |
| 132M | 38k6 | 33 | 8 | 10 | 63 | M12X1.75 | 28 | 6308ZZC3 | 6208ZZC3 |
| 160M | 42k6 | 37 | 8 | 12 | 90 | M16X2.00 | 36 | 6310ZZC3 | 6208ZZC3 |
| 160L | 42k6 | 37 | 8 | 12 | 90 | M16X2.00 | 36 | 6310ZZC3 | 6208ZZC3 |
| 180M | 48k6 | 42.5 | 9 | 14 | 90 | M16X2.00 | 36 | 6312ZZC3 | 6310ZZC3 |
| 180L | 48k6 | 42.5 | 9 | 14 | 90 | M16X2.00 | 36 | 6312ZZC3 | 6310ZZC3 |
| 200L | 55m6 | 49 | 10 | 16 | 90 | M20X2.50 | 42 | 6313C3 | 6312C3 |
| 225S (2P) | 55m6 | 49 | 10 | 16 | 90 | M20X2.50 | 42 | 6313C3 | 6312C3 |
| 225S (4P-6P) | 60m6 | 53 | 11 | 18 | 110 | M20X2.50 | 42 | 6313C3 | 6312C3 |

5. DIMENSION

5.4 Footed, Small Flange-mounted /IM B34.



Detail drawing of shaft end



| Frame Size | Fig No. | н | Α | В | С | E | к | L | HE | HD | HA | AA | AB | AC | BB |
|---------------|------------|-----|-----|-----|-----|-----|------|-----|-----|-----|----|----|-----|-----|-----|
| 80M | 1 | 80 | 125 | 100 | 50 | 40 | 10 | 303 | 119 | 244 | 9 | 40 | 157 | 179 | 135 |
| 90L | 1 | 90 | 140 | 125 | 56 | 50 | 10 | 362 | 133 | 268 | 10 | 40 | 176 | 185 | 165 |
| 100L | 2 | 100 | 160 | 140 | 63 | 60 | 12 | 370 | 132 | 277 | 12 | 40 | 200 | 199 | 180 |
| 112M | 2 | 112 | 190 | 140 | 70 | 60 | 12 | 385 | 151 | 309 | 12 | 40 | 220 | 240 | 190 |
| 132S | 2 | 132 | 216 | 140 | 89 | 80 | 12 | 450 | 197 | 393 | 15 | 50 | 260 | 284 | 205 |
| 132M | 2 | 132 | 216 | 178 | 89 | 80 | 12 | 488 | 197 | 393 | 15 | 50 | 260 | 284 | 240 |
| 160M | 2 | 160 | 254 | 210 | 108 | 110 | 14.5 | 613 | 190 | 440 | 18 | 60 | 308 | 318 | 265 |
| 160L | 2 | 160 | 254 | 254 | 108 | 110 | 14.5 | 613 | 190 | 440 | 18 | 60 | 308 | 318 | 310 |

| Frame | | | | | | | | | | | | s | | Bearing | | |
|-------|------|------|----|----|----|----------|----|-----|-------|-----|-----|--------|-----|-----------|-----------------------|--|
| Size | D | G | GD | F | EB | DH | EG | Р | N | Т | S | length | М | Drive End | Opposite Drive End | |
| 80M | 19j6 | 15.5 | 6 | 6 | 32 | M6X1.00 | 16 | 120 | 80j6 | 3 | M6 | 12 | 100 | 6204ZZC3 | 6204ZZC3 | |
| 90L | 24j6 | 20 | 7 | 8 | 40 | M8X1.25 | 19 | 140 | 95j6 | 3 | M8 | 14 | 115 | 6205ZZC3 | 6205ZZC3 | |
| 100L | 28j6 | 24 | 7 | 8 | 45 | M10X1.50 | 22 | 160 | 110j6 | 3.5 | M8 | 16 | 130 | 6206ZZC3 | 6205ZZC3 | |
| 112M | 28j6 | 24 | 7 | 8 | 45 | M10X1.50 | 22 | 160 | 110j6 | 3.5 | M8 | 16 | 130 | 6207ZZC3 | 6206ZZC3 | |
| 132S | 38k6 | 33 | 8 | 10 | 63 | M12X1.75 | 28 | 200 | 130j6 | 3.5 | M10 | 20 | 165 | 6308ZZC3 | 6208ZZC3 | |
| 132M | 38k6 | 33 | 8 | 10 | 63 | M12X1.75 | 28 | 200 | 130j6 | 3.5 | M10 | 20 | 165 | 6308ZZC3 | 6208ZZC3 | |
| 160M | 42k6 | 37 | 8 | 12 | 90 | M16X2.00 | 36 | 250 | 180j6 | 4 | M12 | 20 | 215 | 6310ZZC3 | 6208ZZC3 | |
| 160L | 42k6 | 37 | 8 | 12 | 90 | M16X2.00 | 36 | 250 | 180j6 | 4 | M12 | 20 | 215 | 6310ZZC3 | 6208ZZC3 | |

Note: Distance from the mounting surface of the flange to the shoulder on the shaft is 0 mm. Note: All dimension is mm.

5. DIMENSION

5.5 Footless, Small Flange-mounted /IM B14.



Detail drawing of shaft end



| Frame Size | Fig | E | L | Р | N | т | S | S length | м | HE | AC | AD |
|---------------|-----|-----|-----|-----|-------|-----|-----|-------------|-----|-----|-----|-----|
| 80M | 1 | 40 | 303 | 120 | 80j6 | 3 | M6 | 12 | 100 | 119 | 179 | 164 |
| 90L | 1 | 50 | 362 | 140 | 95j6 | 3 | M8 | 14 | 115 | 133 | 185 | 178 |
| 100L | 2 | 60 | 370 | 160 | 110j6 | 3.5 | M8 | 16 | 130 | 132 | 199 | 178 |
| 112M | 2 | 60 | 385 | 160 | 110j6 | 3.5 | M8 | 16 | 130 | 151 | 240 | 197 |
| 132S | 2 | 80 | 450 | 200 | 130j6 | 3.5 | M10 | 20 | 165 | 197 | 284 | 261 |
| 132M | 2 | 80 | 488 | 200 | 130j6 | 3.5 | M10 | 20 | 165 | 197 | 284 | 261 |
| 160M | 2 | 110 | 613 | 250 | 180j6 | 4 | M12 | 20 | 215 | 190 | 318 | 280 |
| 160L | 2 | 110 | 613 | 250 | 180j6 | 4 | M12 | 20 | 215 | 190 | 318 | 280 |

| | | | | | | | | Bea | Bearing | | |
|------------|------|------|----|----|----|----------|----|-----------|-----------------------|--|--|
| Frame Size | D | G | GD | F | EB | DH | EG | Drive End | Opposite Drive End | | |
| 80M | 19j6 | 15.5 | 6 | 6 | 32 | M6X1.00 | 16 | 6204ZZC3 | 6204ZZC3 | | |
| 90L | 24j6 | 20 | 7 | 8 | 40 | M8X1.25 | 19 | 6205ZZC3 | 6205ZZC3 | | |
| 100L | 28j6 | 24 | 7 | 8 | 45 | M10X1.50 | 22 | 6206ZZC3 | 6205ZZC3 | | |
| 112M | 28j6 | 24 | 7 | 8 | 45 | M10X1.50 | 22 | 6207ZZC3 | 6206ZZC3 | | |
| 1325 | 38k6 | 33 | 8 | 10 | 63 | M12X1.75 | 28 | 6308ZZC3 | 6208ZZC3 | | |
| 132M | 38k6 | 33 | 8 | 10 | 63 | M12X1.75 | 28 | 6308ZZC3 | 6208ZZC3 | | |
| 160M | 42k6 | 37 | 8 | 12 | 90 | M16X2.00 | 36 | 6310ZZC3 | 6208ZZC3 | | |
| 160L | 42k6 | 37 | 8 | 12 | 90 | M16X2.00 | 36 | 6310ZZC3 | 6208ZZC3 | | |

Note: Distance from the mounting surface of the flange to the shoulder on the shaft is 0 mm. Note: All dimension is mm.



5. DIMENSION

5.6 Terminal box dimension



| Frame Size | Fig | TA | ТВ | ТС | TD | TE | Thermistor |
|---------------------|-----|-----|-----|-----|-------|---------|------------|
| 80, 90L, 100L, 112M | 1 | 152 | 168 | 73 | 13~18 | PF3/4 | No |
| 132S, 132M | 2 | 210 | 180 | 113 | 32~38 | PF1 1/2 | No |
| 160M, 160L | 3 | 210 | 180 | 113 | 32~38 | PF1 1/2 | Yes |
| 180M, 200L, 225S | 4 | 224 | 235 | 153 | - | PF1 1/2 | Yes |