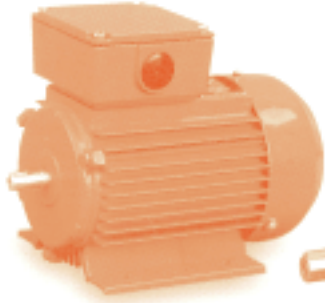
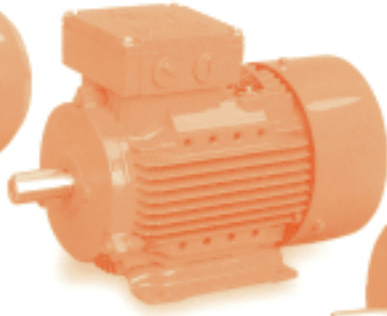


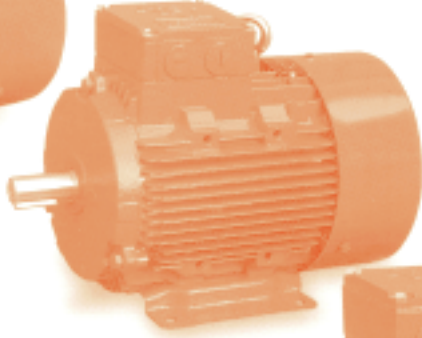
A.G.P. Representaciones S.A.S  
Calle 21A No. 70 - 40, Bodega UA 7 - 1  
Bogota, Colombia  
Tel. : +57 1 5706353  
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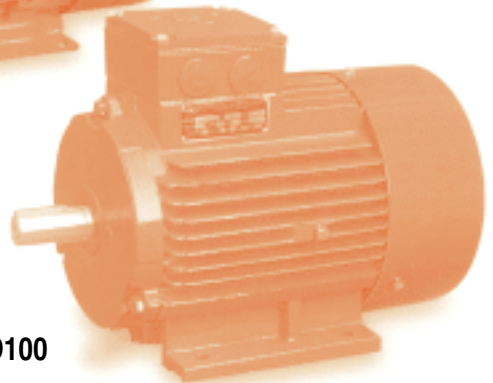
**FRAME: 1AI71**



**FRAME: 1AI90**

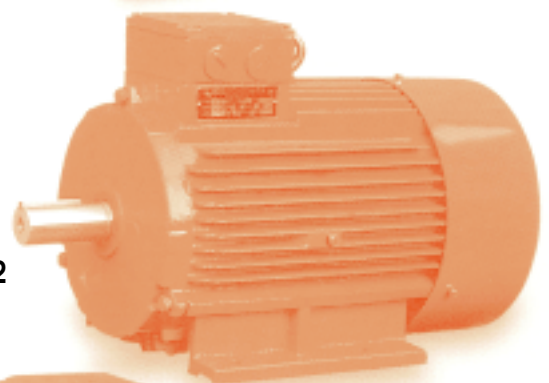


**FRAME: 1AI100**

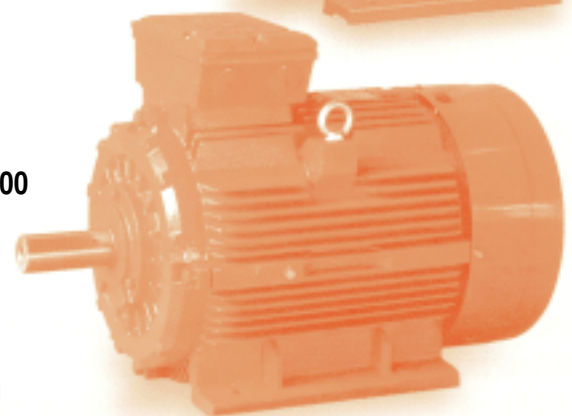


**FRAME: 1D100**

# SELECTED RANGE OF MOTORS

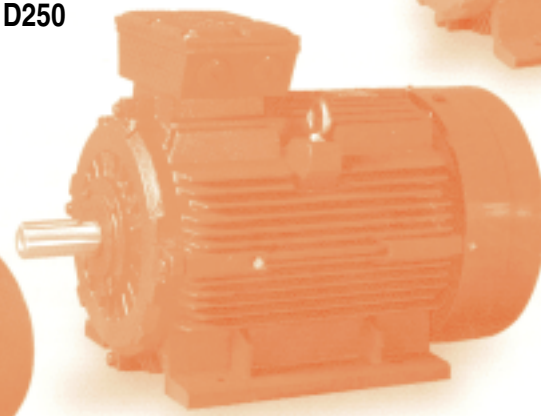


**FRAME: 1D132**

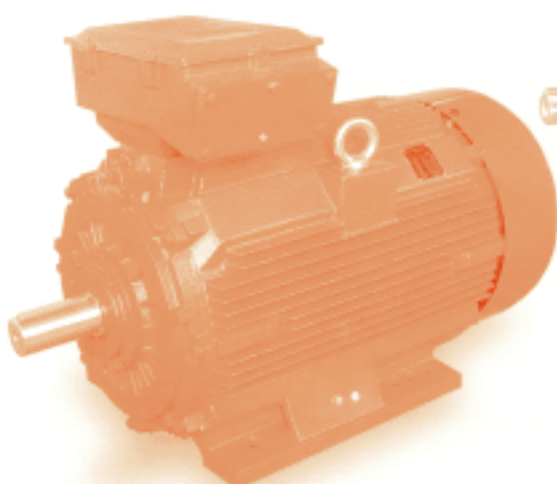


**FRAME: 1D200**

**FRAME: 1D250**



**FRAME: 1D315**



# STANDARDS COMPLIANCE

Western Electric motors are designed and manufactured to meet the most arduous service conditions, such as mining, petrochemical, marine or tropical environments. The motors are made from high quality materials and workmanship. With proper maintenance these motors will operate for 30 years or more, even in the toughest conditions.

These motors offer excellent value for money to the user. They are built to comply with current International Standards, such as:

- International Electrotechnical Commission - IEC 60034 and IEC 60072.
- Australian Standards - AS 1359.
- British Standards - BS 5000 and BS 4999.
- The requirements for European "CE" marking.
- Western Electric's design and manufacturing capabilities are accredited to ISO9001 by Lloyd's Register Quality Assurance



ISO-9001



## Introduction and list of parts

AS 1359 - 0. BS 4999 - 0. This standard introduces the other parts of the national standards that have been issued to date.

## Definitions

IEC 60034-1. AS 1359 - 1. BS 4999 - 116. This standard defined the terms used.

## Dimension symbols

AS 1359 - 2. BS 4999 - 103. Specifies the letter used for principal dimensions of machines and slide rails.

## Direction of rotation and markings of terminals

IEC 60034 - 8. AS 1359 - 3. BS 4999 - 108. Specifies the direction of rotation in relation to terminal markings.

## Rating plate markings

IEC 60034 - 1. AS 1359 - 101. This standard specifies the information that should be included in the nameplate on the motor.

## Designations and dimensions

IEC 60072 AS. 1359 - 10. BS 4999 - 141. Specifies the standardised external dimensions and tolerance for frame 56 to 400. This standard does not reference output power ratings to frame sizes.

## Classification of types of enclosure

IEC 60034 - 5. AS 1359 - 20. BS 4999 - 105 and AS 1939. These standards specify the Degrees of Protection of electrical equipment, commonly known as the "IP" code.

## DEGREE OF PROTECTION

| Designation | First Numeral<br>Protection against contact and ingress of foreign bodies.<br>Protection against hazardous ~ Live parts and moving mechanical parts                                 | Second Numeral<br>Protection against water   |
|-------------|---|--|
|             | 5. Ingress of dust is not totally prevented, but dust shall not interfere with the satisfactory operation of equipment. A probe of 1 mm diameter shall not penetrate the enclosure. | 5. Water projected in jets against the enclosure from any direction will have no harmful effects |
|             | 6. No ingress of dust   | 6. Water projected in power jets shall have no harmful effects                                   |
| IP55        | Dust protected  | Jetting Water  |
| IP56        | Dust protected  | Powerful jetting   |
| IP65        | Dust Tight  | Jetting Water  |
| IP66        | Dust Tight  | Powerful jetting   |

All Western Electric motors are protected to IP55 as a minimum. Higher levels of protection are available on request.

### Classification of methods of cooling

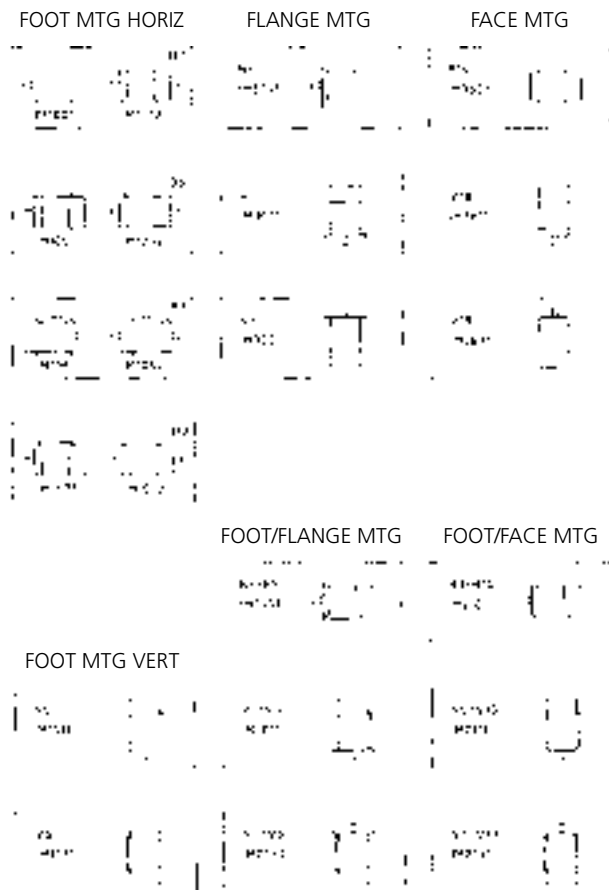
IEC 60034 - 6. AS 1359 - 106. BS EN60034 - 6. Assigns designations to the methods of cooling electric motors, commonly known as the "IC" code. A standard totally enclosed fan cooled motor is IC0141.

### Rating plate markings

IEC 60034 - 1. AS 1359 - 101. This standard specifies the information that should be included in the nameplate on the motor.

### Mounting arrangements and types of construction

IEC 60034 - 7. AS 1359 - 107. BS EN60034 - 7. Assigns designations to standard mounting arrangements commonly known as the IM code.



### Duty and ratings

IEC 60034 - 1. AS 1359 - 30. BS EN60034 - 2 and BS 5000 - 10. Specifies machine cubes or duty cycle, S1 to S9. S1 is continuous running with a constant load. This standard also specifies preferred values of output ratings in kilowatts, and preferred frame sizes for these kilowatt ratings.

### Service and operating conditions

IEC 60034 - 1. AS 1359 - 31. This standard specifies the service conditions which are suitable for an electric motor, e.g. altitudes, ambient temperatures, voltages, frequency, etc. This standard also has an Appendix which details the effect of unbalanced voltages on the performance of a 3 phase induction motors.

### Temperature limits and measurements of temperature

IEC 60034 - 1. AS 1359 - 101. Specifies the limits of temperature rise for various parts and different levels of insulation. It also specifies the formula for calculation of the temperature rise of a winding.

### Methods of determining losses and efficiency

IEC 60034 - 1. AS 1359 - 101 - 1. BS 4999 - 102. Specifies the method of calculating the efficiency of a motor using the Summation of Losses Method, as well as other methods.

### General characteristics

IEC 60034 - 12. AS 1359 - 41. BS EN 60034 - 1. Specifies designations relating to starting performance for torque and current, and also pullup and pullout torque. There are 4 designations in IEC N, NY, H, HY and 8 designations in AS N, NR, NS, NY, H, HR, HS, HY.

### Vibration limits

IEC 60034 - 14. AS 1359 - 114. BS 4999 - 142. Specifies limits of vibration severity.

### Noise level limits

IEC 60034 - 9. AS 1359 - 109. BS EN60034 - 9. Specifies noise level limits in Sound Power for electric motors. It also provides guidance on conversion between. Sound Power and Sound Pressure. In general, the levels specified in this standard are easily achievable.

### Tests

IEC 60034 - 1. AS 1359 - 101. BS 4999 - 143. This standard sets out the test requirements for electric motors. It defines different types of tests and test arrangement, including overspeed, temperature rise, vibration, noise, high voltage, and locked rotor.

### Tolerances

IEC 60034 - 1, AS 1359 - 101 specifies allowable tolerances for efficiency power factor, speed, locked rotor torque, pullout torque, starting current, moment of inertia.

# GENERAL SPECIFICATIONS

## IEC Standard

All motors are designed and manufactured to meet the international electrotechnical commission - IEC 60034 and IEC 60072.

## Efficiency performance standards

In Europe, there is a voluntary agreement between motor suppliers and the European commission to classify three phase motors according to their efficiency. The agreement includes all two pole and four pole standard motors in the output range 1 and 100kW. The three classes are eff1, eff2, eff3 where eff3 represents motors at present with usual efficiencies, eff2 significantly increased efficiencies and eff1 is a mark for high efficiency motors. In Australia, standard AS/NZS 1359.5 specifies Minimum Energy Performance Standards (MEPS). The standard includes 2, 4, 6, 8 pole standard motors with ratings from 0.73 kW and up to but not including 185kW. This regulation came into effect as of 1st Oct 2001.

## Voltages/Frequencies

Standard voltages are 380V 50Hz, 400V 50Hz, 415V 50Hz, 220/380V 60Hz and 440/460V 60Hz.

Voltage tolerance is +/- 10%. Voltages beyond these limits will cause a high winding temperature rise.

## Torque/Current Characteristics

In general W.E. motors have high starting torques and low starting currents because the rotors have a double cage design which is pressure die cast in high purity aluminium. The motors are fitted with squirrel-cage rotors suitable for direct-on-line starting. The resulting starting and maximum torques, expressed as a multiple of the rated torques are given in the performance data. A deviation in the voltage from the rated value changes the torques as approximate function of the square of the voltages.

## Duty Cycles

|   |  |
|---|--|
| S1<br>Continuous<br>Duty  | Operation under constant load, lasting long enough to allow the machine to reach thermal equilibrium.  |
| S2<br>Short-Time<br>Duty  | Operation under constant load, for a time too short to allow the machine to reach thermal equilibrium. Idle time of the machine is long enough to allow the machine to cool down to ambient temperature.<br><br>Standard duration of short-term operation: 10, 30, 60 and 90 minutes.  |
| S3<br>Intermittent<br>Periodic Duty                                 | Operation under repeated, constant load in specified cycles. Neither operating nor resting period are long enough to allow the motor to reach thermal equilibrium. The starting losses are small and do not essentially influence the temperature rise. The nominal values of relative starting time are 15, 25, 40, 60% at a daily 10-minute cycle. |
| S4<br>Intermittent<br>Periodic Duty                                 | Operation under repeated, constant load in specified cycles. The start of the motor influences the temperature rise.   |
| S5<br>Intermittent<br>Periodic Duty                                 | Same as S4 operation, except that the electric braking of the machine has an essential influence on the temperature rise.  |
| S6<br>Continuously<br>Operation<br>with<br>Cyclic Load              | Operation consisting of a continuous series of equal cycles. Each cycle is made up of no-load and a constant load period. The cycle duration is not long enough to allow the machine to reach thermal equilibrium in one cycle. In order to define S6 operation, the relative starting time must be specified.                                       |
| S7<br>Intermittent<br>Periodic Duty<br>with Starting<br>and Braking | Uninterrupted operation with a series of constant loading and braking periods. The most demanding type of operation for the motor. In order to define this type of operation, the number of cycles per hour and the inertia constant must be specified.  |
| S8<br>Intermittent<br>Periodic Duty<br>with Pole<br>Changing        | This type of operation only exists with pole amplitude modulated motors. In this case the definition of operation must contain the following data for each pole:<br>- Number of starts per hour<br>- Inertia constant<br>- Relative operating period   |

## Insulation

The components of the insulation system are selected so as to ensure good protection against chemically aggressive gases, vapours, dust, oil and air humidity. All materials used for insulating the winding and winding ends correspond to insulating classes F or H according to IEC 60085:

- Enamel-insulated copper wires with temperature index 200 (Class H);
- Insulating sheet on polyester base (Class F);
- Impregnation with fenolic resins modified with polyester resins (Class H);

Limit temperature for insulating material according IEC 60085

| Insulation Class | Limit Temperature (°C) |
|------------------|------------------------|
| B                | 130                    |
| F                | 155                    |
| H                | 180                    |

## Temperature Rise

Standard single-speed continuous duty (S1) motors have temperature rise within class B limit. Motors with higher output and pole-changing motors normally have temperature rise within Class F limit.

| Insulation Class | Max. Temperature Rise(°C) |
|------------------|---------------------------|
| B                | 80                        |
| F                | 105                       |
| H                | 125                       |

Temperature rises specified at a reference ambient air temperature of 40°C.

## Protection Devices

In order to protect the winding of a three-phase induction motor against thermal overloads, eg, resulting from overloading or operation with only two phases, one of the following devices can be provided:

### Bimetallic type device:

It consists of 2 motor protectors connected in series. The contact is normally closed; the disc opens when

the winding temperature reaches limits dangerous for the insulation system. On request normally open contacts are available.

### PTC temperature sensor (thermistors):

It consists of 3 sensors connected in series embedded in the stator winding. Once reaching the operating temperature, the device quickly changes its resistance; it must be connected to a suitable releasing device (supplied only on request).

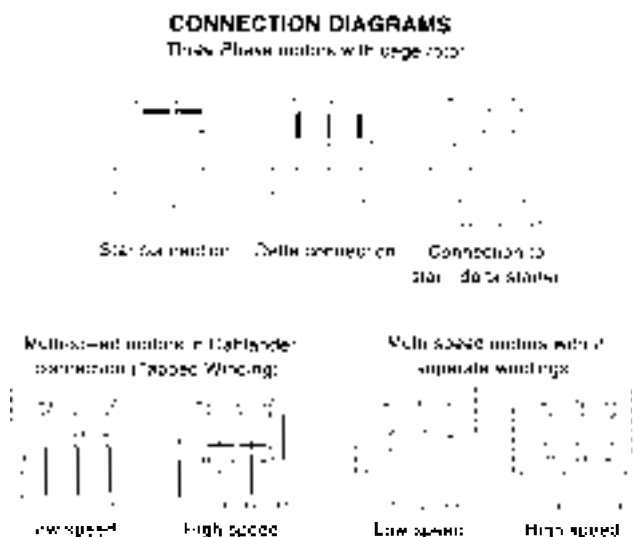
### PT 100 thermometric resistors

The resistance value of this device varies according to the winding temperature. They are particularly suitable for a continuous survey of the winding temperature. For a good survey, at least two sets of PT 100 are required, they must be connected to proper monitoring equipment (supplied only on request).

PTC and PT 100 also offer reliable protection for operating modes other than continuous operation, e.g. short-time operation, switching operation, longtime start-up as well as for reduced cooling air flow rates and high ambient temperatures.

Anti-condensation heaters can be fitted as an option to all motors and recommended for IP56 and IP66 motors.

All motors can be supplied with separate terminal boxes for heaters and/or thermistors as an option.



## **Construction**

Shafts are made from high quality carbon steel.

1D - cast iron frame

1AI - Aluminium frame

63-71 stator frames are available in aluminium only.

80-200 stator frames are available in aluminium and T200 grade cast iron.

225-355 stator frames are available in T200 grade cast iron.

Endshields for all motors are made from T200 cast iron.

Stator and rotor laminations are produced from low loss, double insulated, silicon electrical steel.

Fans are made from glass reinforced polypropylene for small motors up to 280 frame size.

The 315/355 frame motors have aluminium fans as standard. Cast iron, steel or aluminium fans are available for all motors as an option. Fan Cowls are made from pressed steel for all motor up to 315 frame, and from cast iron for 355 frame.

Rainhoods are available for motors mounted shaft down.

Stainless steel nameplates are standard for all motors.

All bolts and screws are zinc electroplated as protection against corrosion.

## **Enclosures**

All motors are totally enclosed fan cooled (TEFC) with IP55 degree of protection as standard. Higher IP factors are available on request.

## **Mounting Flexibility**

All motors are available in B3 (IM1001), B3/5 (IM2001), and V1 (IM3011) configuration. All standard

motors up to 280 frames can be mounted in any direction, i.e. shaft up, shaft down, etc. They can also be mounted B5 (IM3001). Please consult a Western Electric office about mounting 315 and 355 frame motors - usually these can only be B3, B3/5, or V1.

B14A flange mounting is available up to 160 frame size.

Care must be taken when mounting motors in a non standard mounting position to maintain the IP rating of the motor. If in doubt, please contact your nearest Western Electric office.

## **Terminal Boxes and Cable Entries**

Terminal boxes are made from aluminium for 1AI motors, and cast iron for 1D motors.

1D motors have top-mounted terminal boxes.

1AI motors have removable aluminium feet which can be repositioned. This allows a top or side mounting terminal box.

Cable gland entries are metric as standard and the thread sizes are specified with the dimensional data in this brochure. PG threads are also available as option.

## **Bearings and Lubrication**

High quality vacuum degassed bearings are used on W.E. motors. In general the bearings have C3 clearances and are preloaded with a wave washer on the drive-end which increases bearing life and reduces bearing noise. Motors from frame 160 upwards have their bearings located on the non drive end as standard, to prevent shaft "float". However, this feature is optional for motors up to frame 132. Motors up to 132 frame have "zz" sealed for life bearings, while motors from 160 frame and above have open bearings with "flush through" regreasing facilities. In line with current practice, motors up to 280 frames have deep groove ball bearings at both ends, while the 315 and 355 frame motors have a roller bearing on the drive end. Roller bearings can be fitted on the

drive end of any motor on request.

Recommended grease for regreasing is Shell Alvania R3.

Special bearing arrangements can be accommodated such as fitting angular contact, or 4 point contact QJ bearings, for thrust loads.

All bearings are protected from the external environment with oil seals on the drive and non drive end.

Labyrinth seals can be fitted as an option for external protection of bearings for 160 frames and above.

### Vibration

The motors are dynamically balanced in accordance with vibration severity grade "N" normal balance IEC 60034-14. The low vibration version "R" (reduced) or vibration severity grade "S" (special) can be supplied where high demands are made on quiet running. Care must be taken to ensure that transmission parts (pulleys, couplings) supplied by others are dynamically balanced with half feather key. Vibration limits according to IEC 60034-14

| Vibration Grade | Speed Range<br>(1/min) | Limit values of the speed of vibration/ oscillation for frame sizes: |                      |                      |
|-----------------|------------------------|--|----------------------|----------------------|
|                 |                        | 63 to 132<br>(mm/s)  | 160 to 225<br>(mm/s) | 250 to 355<br>(mm/s) |
| N<br>(normal)   | 600 to 3600            | 1.8  | 2.8                  | 4.5                  |
| R<br>(reduced)  | 600to 1800             | 0.71   | 1.12                 | 1.8                  |
|                 | 1800 to 3600           | 1.12   | 1.8                  | 2.8                  |
| S<br>(special)  | 600 to 1800            | 0.45   | 0.71                 | 1.12                 |
|                 | 1800to 3600            | 0.71   | 1.12                 | 1.8                  |

### Noise Level

Noise measurements are performed to IEC 60034-9. In the performance data, the sound pressure level "Lp" are given in dB(A) for the individual frame sizes. They apply for no load at 50Hz. The tolerance is

+3dB(A). At 60 Hz the values of sound pressure increase approximately by 4dB(A).

### Direction of Rotation

The motors can be operated in both directions of rotation. If the phases are connected in the sequence L1, L2, L3 to the terminals U1, V1, W1, the motor turns clockwise. The direction of rotation can be reversed by interchanging any two phase of conductors. Some larger 2 pole motors may require unidirectional fans to meet special noise level requirements.

### Paint Finish

All cast iron motor parts are cleaned and etch primed (polyvinyl butyral and epoxy) to 25 microns or more before machining. Aluminium parts are etch primed on external surfaces. Final top coat paint is an air drying enamel based on epoxy polymer resins to 25 micron or more. The color is blue (RAL 5015) as standard. Special paint treatments are available on request.

### Other Design Options

Special requirements can be supplied such as:

Non standard flanges, double shaft extensions, non standard shaft sizes, special rotor designs for special torque requirements, 2 or 3 speed motors.

Motors can be supplied with force ventilation systems for VVVF drive applications.

Sun shields are recommended for motors that are going to be exposed to direct sunlight in high ambient temperatures.

Please contact your nearest Western Electric office with your requirements.



# PERFORMANCE DATA

## 2 POLE - 3000 RPM SYNCHRONOUS SPEED 50 Hz

| MOTOR TYPE     | FULL LOAD |                  |                 |                 |                 |                 |         | EFFICIENCY@: |       |       |        |       | FULL LOAD TORQUE |         |         | M of I J (kgm <sup>2</sup> ) | NOISE LEVEL 1M dB(A) | NETT WEIGHT (kg) |    |      |     |
|----------------|-----------|------------------|-----------------|-----------------|-----------------|-----------------|---------|--------------|-------|-------|--------|-------|------------------|---------|---------|------------------------------|----------------------|------------------|----|------|-----|
|                | OUTPUT kW | LOAD SPEED (RPM) | INL 400V (AMPS) | IFL 380V (AMPS) | IFL 400V (AMPS) | IFL 415V (AMPS) | IST IFL | 100%FL       | 75%FL | 50%FL | 100%FL | 75%FL | 50%FL            | TST TFL | TPU TFL |                              |                      | TM TFL           | 1D | 1A1  |     |
| 1A163-2        | 0.18      | 2779             | 0.3             | 0.5             | 0.5             | 0.5             | 4.6     | 63           | 62.0  | 58.0  | 0.82   | 0.75  | 0.67             | 0.6     | 2.5     | 2.5                          | 3.1                  | 0.0003           | 53 | 7    |     |
| 1A1711-2       | 0.37      | 2823             | 0.7             | 1.0             | 0.9             | 0.9             | 4.9     | 71           | 71.0  | 68.0  | 0.8    | 0.73  | 0.69             | 1.3     | 2.4     | 2.4                          | 2.9                  | 0.0006           | 54 | 10   |     |
| 1A1712-2       | 0.55      | 2843             | 0.8             | 1.3             | 1.3             | 1.2             | 5.9     | 76           | 75.0  | 69.0  | 0.82   | 0.74  | 0.58             | 1.8     | 3.3     | 3.1                          | 3.5                  | 0.0007           | 53 | 10   |     |
| 1D(1A1)801-2   | 0.75      | 2844             | 0.9             | 1.8             | 1.7             | 1.7             | 5.5     | 75           | 74.2  | 71.1  | 0.84   | 0.8   | 0.66             | 2.5     | 2.2     | 1.7                          | 2.5                  | 0.0008           | 53 | 19   | 11  |
| 1D(1A1)802-2   | 1.1       | 2842             | 1.2             | 2.5             | 2.4             | 2.3             | 5.5     | 78.4         | 78.2  | 75.0  | 0.84   | 0.78  | 0.66             | 3.7     | 2.2     | 2.1                          | 2.5                  | 0.0009           | 54 | 20   | 12  |
| 1D(1A1)90S-2   | 1.5       | 2852             | 1.4             | 3.4             | 3.2             | 3.1             | 6.1     | 79.8         | 79.8  | 77.0  | 0.85   | 0.81  | 0.7              | 5       | 2.9     | 2.8                          | 3.2                  | 0.0012           | 61 | 26   | 16  |
| 1D(1A1)90L-2   | 2.2       | 2844             | 1.9             | 4.8             | 4.6             | 4.4             | 6.1     | 82.1         | 82.7  | 80.0  | 0.85   | 0.81  | 0.71             | 7.4     | 2.7     | 2.4                          | 3                    | 0.0014           | 61 | 28   | 18  |
| 1D(1A1)100L-2  | 3         | 2849             | 2.2             | 6.2             | 5.9             | 5.7             | 6.9     | 83.3         | 84.3  | 82.9  | 0.88   | 0.84  | 0.74             | 10      | 3.1     | 3                            | 3.7                  | 0.0039           | 67 | 42   | 27  |
| 1D(1A1)112M1-2 | 4         | 2855             | 2.5             | 7.9             | 7.5             | 7.2             | 6.6     | 84.8         | 85.4  | 84.4  | 0.91   | 0.87  | 0.8              | 13      | 2.4     | 2.3                          | 3.2                  | 0.0055           | 67 | 47   | 31  |
| 1D(1A1)112M2-2 | 5.5       | 2888             | 3.4             | 10.5            | 10.0            | 9.6             | 7.5     | 87.2         | 87.9  | 86.8  | 0.91   | 0.88  | 0.79             | 18      | 2.7     | 2.6                          | 3.2                  | 0.007            | 71 | 54   | 35  |
| 1D(1A1)132S1-2 | 5.5       | 2903             | 3.7             | 10.8            | 10.3            | 9.9             | 7.7     | 85.9         | 86.0  | 83.4  | 0.9    | 0.86  | 0.78             | 18      | 2.8     | 2.3                          | 3.7                  | 0.0109           | 71 | 69   | 48  |
| 1D(1A1)132S2-2 | 7.5       | 2910             | 4.5             | 14.5            | 13.8            | 13.3            | 7.5     | 87.2         | 86.8  | 84.8  | 0.9    | 0.87  | 0.8              | 25      | 2.6     | 2.2                          | 3.5                  | 0.013            | 72 | 72   | 51  |
| 1D(1A1)132M-2  | 11        | 2900             | 5.9             | 20.8            | 19.7            | 19.0            | 7.6     | 88.5         | 88.6  | 87.6  | 0.91   | 0.88  | 0.81             | 36      | 2.4     | 2.2                          | 3.3                  | 0.028            | 72 | 84   | 63  |
| 1D(1A1)160M1-2 | 11        | 2927             | 6.1             | 21.1            | 20.0            | 19.3            | 7       | 89           | 89.0  | 87.5  | 0.89   | 0.87  | 0.8              | 36      | 2.1     | 1.9                          | 3.1                  | 0.038            | 78 | 124  | 100 |
| 1D(1A1)160M2-2 | 15        | 2931             | 8.3             | 28.4            | 22.0            | 26.0            | 7.3     | 90.1         | 90.4  | 89.2  | 0.89   | 0.86  | 0.8              | 49      | 2.3     | 2                            | 3.2                  | 0.045            | 80 | 134  | 107 |
| 1D(1A1)160L-2  | 18.5      | 2933             | 8.2             | 34.5            | 32.7            | 31.6            | 7.7     | 90.6         | 90.0  | 89.6  | 0.9    | 0.88  | 0.81             | 60      | 2.4     | 1.8                          | 3.1                  | 0.055            | 79 | 152  | 122 |
| 1D(1A1)180M-2  | 22        | 2945             | 11.8            | 41.0            | 38.9            | 37.5            | 7.3     | 90.6         | 90.5  | 87.8  | 0.9    | 0.88  | 0.81             | 71      | 2.5     | 1.4                          | 3.3                  | 0.075            | 81 | 174  | 145 |
| 1D(1A1)200L1-2 | 30        | 2945             | 14.4            | 56.0            | 53.2            | 51.3            | 6.5     | 91.5         | 91.0  | 88.8  | 0.89   | 0.87  | 0.82             | 97      | 2.3     | 1.8                          | 2.7                  | 0.124            | 84 | 265  | 220 |
| 1D(1A1)200L2-2 | 37        | 2951             | 16              | 67.7            | 54.4            | 62.0            | 7       | 92.2         | 91.8  | 89.9  | 0.9    | 0.88  | 0.83             | 120     | 2.5     | 1.7                          | 2.9                  | 0.139            | 86 | 285  | 240 |
| 1D225M-2       | 45        | 2953             | 20.3            | 81.0            | 76.9            | 74.1            | 6.9     | 92.8         | 92.4  | 90.4  | 0.91   | 0.9   | 0.85             | 145     | 2.5     | 2.5                          | 3.4                  | 0.233            | 86 | 337  |     |
| 1D250M1-2      | 55        | 2956             | 30.1            | 101.7           | 96.6            | 93.1            | 7.6     | 92.3         | 92.0  | 89.7  | 0.89   | 0.88  | 0.81             | 177     | 2.6     | 1.9                          | 3.6                  | 0.312            | 86 | 430  |     |
| 1D250M2-2      | 75        | 2973             | 35              | 134.1           | 127.4           | 122.8           | 6.9     | 94.4         | 93.8  | 92.4  | 0.9    | 0.87  | 0.81             | 241     | 2.1     | 1.6                          | 3.5                  | 0.412            | 89 | 505  |     |
| 1D280S-2       | 75        | 2974             | 34.1            | 135.0           | 128.2           | 123.5           | 7       | 93.8         | 93.0  | 90.6  | 0.9    | 0.89  | 0.84             | 241     | 2.2     | 1.7                          | 3.3                  | 0.597            | 88 | 535  |     |
| 1D280M1-2      | 90        | 2970             | 36.1            | 158.0           | 150.1           | 144.6           | 6.8     | 94.1         | 93.7  | 92.1  | 0.92   | 0.91  | 0.88             | 289     | 2.1     | 1.9                          | 3.3                  | 0.675            | 90 | 578  |     |
| 1D280M2-2      | 110       | 2959             | 36.3            | 192.4           | 182.8           | 176.2           | 7.1     | 94.4         | 94.3  | 93.2  | 0.92   | 0.93  | 0.91             | 354     | 2.8     | 1.8                          | 3                    | 0.86             | 90 | 620  |     |
| 1D315S-2       | 110       | 2974             | 45.3            | 194.3           | 184.6           | 178.0           | 6       | 94.5         | 93.9  | 92.0  | 0.91   | 0.89  | 0.83             | 353     | 2.4     | 2                            | 2.7                  | 1.18             | 91 | 1100 |     |
| 1D315M-2       | 132       | 2983             | 54.8            | 230.0           | 218.5           | 210.6           | 7.3     | 94.8         | 94.9  | 93.1  | 0.92   | 0.91  | 0.86             | 423     | 2.4     | 2                            | 2.8                  | 1.55             | 92 | 1153 |     |
| 1D315L1-2      | 160       | 2978             | 61.1            | 277.0           | 263.1           | 253.5           | 7.8     | 95.4         | 94.8  | 93.6  | 0.92   | 0.92  | 0.89             | 513     | 2.7     | 1.8                          | 3                    | 1.76             | 92 | 1195 |     |
| 1D315L2-2      | 200       | 2971             | 67.5            | 348.0           | 330.6           | 318.7           | 7.5     | 94.9         | 94.8  | 93.4  | 0.92   | 0.91  | 0.88             | 643     | 2.7     | 2                            | 3.1                  | 2.02             | 92 | 1255 |     |
| 1D355M-2       | 250       | 2984             | 160.5           | 482.2           | 458.1           | 441.6           | 6.7     | 94.9         | 94.1  | 92.1  | 0.83   | 0.8   | 0.72             | 800     | 1.8     | 1.5                          | 2.5                  | 3.56             | 94 | 1920 |     |
| 1D355L-2       | 315       | 2986             | 189.2           | 595.4           | 565.6           | 545.1           | 6.2     | 95.7         | 95.1  | 93.6  | 0.84   | 0.81  | 0.73             | 1007    | 1.8     | 1.5                          | 3                    | 4.16             | 95 | 2060 |     |

•INL = No load Current •IFL = Full Load Current •IST = Locked Rotor Current •TST = Locked Rotor Torque •TPU = Pull Up Torque •TM = Maximum Torque  
 •TFL = Full Load Torque

Motors rated 2 and 4 pole, 1kW to 100kW comply with Eff2.

Motors rated from 0.73kW up to and including 185kW comply with MEPS minimum Efficiency Test method B (refer AS 1359 - 5)

## 4 POLE - 1500 RPM SYNCHRONOUS SPEED 50 Hz

| MOTOR TYPE     | FULL OUTPUT LOAD |             |             |             |             |             | IST | EFFICIENCY@: |       |       |        |       | POWER FACTOR @: |             |         |         |        | FULL LOAD |     |      | M of I J (kgm <sup>2</sup> ) | NOISE LEVEL 1M dB(A) | NETT WEIGHT (kg) |  |
|----------------|------------------|-------------|-------------|-------------|-------------|-------------|-----|--------------|-------|-------|--------|-------|-----------------|-------------|---------|---------|--------|-----------|-----|------|------------------------------|----------------------|------------------|--|
|                | kW               | SPEED (RPM) | 400V (AMPS) | 380V (AMPS) | 400V (AMPS) | 415V (AMPS) |     | 100%FL       | 75%FL | 50%FL | 100%FL | 75%FL | 50%FL           | TORQUE (Nm) | TST TFL | TPU TFL | TM TFL | 1D        | 1AI |      |                              |                      |                  |  |
| 1AI632-4       | 0.18             | 1369        | 0.5         | 0.6         | 0.6         | 0.6         | 3.5 | 63           | 63.0  | 57.0  | 0.71   | 0.61  | 0.53            | 1.3         | 2.2     | 2.2     | 2.5    | 0.0006    | 50  | 7    |                              |                      |                  |  |
| 1AI712-4       | 0.37             | 1371        | 0.8         | 1.1         | 1.1         | 1.0         | 3.9 | 69           | 72.0  | 70.0  | 0.73   | 0.64  | 0.53            | 2.6         | 2.3     | 2.2     | 2.5    | 0.0016    | 48  | 10   |                              |                      |                  |  |
| 1D(1AI)801-4   | 0.55             | 1410        | 1           | 1.5         | 1.5         | 1.4         | 4.6 | 72.6         | 73.1  | 69.2  | 0.75   | 0.67  | 0.54            | 3.7         | 2.2     | 1.9     | 2.5    | 0.002     | 45  | 18   | 10                           |                      |                  |  |
| 1D(1AI)802-4   | 0.75             | 1408        | 1.3         | 2.1         | 2.0         | 1.9         | 4.3 | 73.8         | 74.5  | 70.4  | 0.75   | 0.66  | 0.53            | 5.1         | 2.1     | 1.9     | 2.4    | 0.002     | 55  | 19   | 11                           |                      |                  |  |
| 1D(1AI)90S-4   | 1.1              | 1408        | 1.8         | 2.9         | 2.7         | 2.6         | 4.4 | 75.5         | 76.4  | 74.5  | 0.77   | 0.68  | 0.55            | 7.5         | 2       | 2       | 2.4    | 0.0021    | 57  | 25   | 15                           |                      |                  |  |
| 1D(1AI)90L-4   | 1.5              | 1402        | 2           | 3.7         | 3.6         | 3.4         | 4.7 | 78           | 79.7  | 78.6  | 0.78   | 0.7   | 0.57            | 10          | 2.4     | 2.3     | 2.5    | 0.003     | 58  | 26   | 17                           |                      |                  |  |
| 1D(1AI)100L1-4 | 2.2              | 1413        | 2.9         | 5.2         | 4.9         | 4.8         | 5.4 | 80.3         | 81.1  | 79.3  | 0.8    | 0.72  | 0.59            | 15          | 2.5     | 2.5     | 2.8    | 0.007     | 57  | 34   | 24                           |                      |                  |  |
| 1D(1AI)100L2-4 | 3                | 1426        | 3.5         | 6.9         | 6.6         | 6.4         | 5.8 | 82.0         | 82.7  | 81.0  | 0.8    | 0.74  | 0.62            | 20          | 2.4     | 2.4     | 3.1    | 0.007     | 57  | 38   | 28                           |                      |                  |  |
| 1D(1AI)112M-4  | 4                | 1427        | 4.2         | 8.8         | 8.4         | 8.1         | 6   | 83.8         | 84.9  | 83.4  | 0.82   | 0.77  | 0.66            | 27          | 2.5     | 2.5     | 3.1    | 0.0095    | 60  | 50   | 36                           |                      |                  |  |
| 1D(1AI)132S-4  | 5.5              | 1451        | 5.5         | 11.8        | 11.2        | 10.8        | 6.7 | 86.4         | 87.2  | 85.5  | 0.82   | 0.76  | 0.66            | 36          | 2.2     | 2.2     | 3.3    | 0.0214    | 61  | 70   | 49                           |                      |                  |  |
| 1D(1AI)132M1-4 | 7.5              | 1445        | 6           | 15.1        | 14.3        | 13.8        | 7.1 | 87.8         | 88.2  | 87.3  | 0.86   | 0.81  | 0.71            | 50          | 2.3     | 2.3     | 3      | 0.0296    | 61  | 80   | 58                           |                      |                  |  |
| 1D(1AI)132M2-4 | 11               | 1446        | 8           | 22.1        | 21.0        | 20.3        | 6.4 | 88.8         | 89.4  | 88.1  | 0.85   | 0.8   | 0.71            | 73          | 1.9     | 1.9     | 2.7    | 0.062     | 68  | 89   | 67                           |                      |                  |  |
| 1D(1AI)160M-4  | 11               | 1446        | 8.3         | 22.4        | 21.3        | 20.5        | 7   | 88.9         | 87.4  | 83.2  | 0.84   | 0.82  | 0.76            | 72          | 1.9     | 1.9     | 2.7    | 0.075     | 72  | 124  | 100                          |                      |                  |  |
| 1D(1AI)160L-4  | 15               | 1457        | 12.7        | 30.5        | 29.0        | 27.9        | 7.6 | 90.1         | 88.8  | 82.3  | 0.83   | 0.79  | 0.74            | 98          | 2       | 2       | 3.6    | 0.092     | 74  | 147  | 120                          |                      |                  |  |
| 1D(1AI)180M-4  | 18.5             | 1471        | 13.4        | 35.7        | 33.9        | 32.7        | 7   | 90.5         | 91.8  | 89.9  | 0.87   | 0.82  | 0.73            | 120         | 2       | 2       | 3.5    | 0.139     | 69  | 172  | 135                          |                      |                  |  |
| 1D(1AI)180L-4  | 22               | 1468        | 14.5        | 41.2        | 39.1        | 37.7        | 7.4 | 91.2         | 91.2  | 89.9  | 0.89   | 0.85  | 0.76            | 143         | 2.1     | 2.1     | 3.5    | 0.158     | 69  | 184  | 145                          |                      |                  |  |
| 1D(1AI)200L-4  | 30               | 1472        | 18.2        | 56.0        | 53.2        | 51.3        | 6.5 | 91.4         | 91.3  | 90.2  | 0.89   | 0.88  | 0.8             | 195         | 1.9     | 1.9     | 3.2    | 0.262     | 78  | 286  | 230                          |                      |                  |  |
| 1D225S-4       | 37               | 1476        | 22.5        | 70.9        | 67.4        | 64.9        | 6.5 | 92.2         | 92.2  | 91.0  | 0.86   | 0.85  | 0.77            | 239         | 1.6     | 1.6     | 2.7    | 0.406     | 80  | 338  |                              |                      |                  |  |
| 1D225M-4       | 45               | 1477        | 26.3        | 85.0        | 80.7        | 77.8        | 6.8 | 92.5         | 92.7  | 91.5  | 0.87   | 0.85  | 0.77            | 291         | 1.8     | 1.8     | 3.1    | 0.469     | 82  | 358  |                              |                      |                  |  |
| 1D250M1-4      | 55               | 1475        | 32.5        | 103.3       | 98.1        | 94.6        | 6.4 | 93.0         | 92.9  | 91.9  | 0.87   | 0.84  | 0.78            | 356         | 1.8     | 1.8     | 2.8    | 0.66      | 83  | 449  |                              |                      |                  |  |
| 1D250M2-4      | 75               | 1482        | 47.8        | 141.0       | 133.9       | 129.1       | 6.4 | 94.0         | 93.8  | 92.6  | 0.86   | 0.83  | 0.74            | 483         | 1.6     | 1.6     | 3.1    | 0.88      | 83  | 535  |                              |                      |                  |  |
| 1D280S-4       | 75               | 1483        | 38.2        | 136.8       | 129.9       | 125.3       | 5.9 | 93.6         | 93.4  | 92.0  | 0.89   | 0.87  | 0.82            | 483         | 1.7     | 1.7     | 3      | 1.12      | 85  | 563  |                              |                      |                  |  |
| 1D280M1-4      | 90               | 1484        | 43.8        | 163.1       | 154.9       | 149.3       | 6.4 | 93.9         | 92.8  | 0.89  | 0.87   | 0.81  | 0.81            | 579         | 1.6     | 1.6     | 3.1    | 1.46      | 87  | 634  |                              |                      |                  |  |
| 1D280M2-4      | 110              | 1483        | 53.3        | 196.7       | 186.9       | 180.1       | 6.2 | 94.4         | 93.5  | 0.9   | 0.89   | 0.82  | 0.82            | 708         | 2.1     | 2.1     | 2.8    | 2.68      | 87  | 720  |                              |                      |                  |  |
| 1D315S-4       | 110              | 1484        | 51.8        | 200.8       | 190.7       | 183.8       | 5.9 | 94.6         | 94.5  | 94.1  | 0.88   | 0.88  | 0.84            | 708         | 1.6     | 1.6     | 3      | 3.11      | 85  | 1125 |                              |                      |                  |  |
| 1D315M-4       | 132              | 1485        | 67.5        | 246.3       | 233.9       | 225.5       | 7   | 94.7         | 94.6  | 92.9  | 0.86   | 0.86  | 0.82            | 849         | 1.6     | 1.6     | 3.3    | 3.29      | 86  | 1175 |                              |                      |                  |  |
| 1D315L1-4      | 160              | 1487        | 82.3        | 298.8       | 283.9       | 273.5       | 5.8 | 95.7         | 95.0  | 94.1  | 0.85   | 0.85  | 0.78            | 1028        | 1.7     | 1.7     | 3.1    | 3.79      | 85  | 1240 |                              |                      |                  |  |
| 1D315L2-4      | 200              | 1485        | 102.5       | 359.3       | 341.4       | 329.0       | 4.8 | 96.1         | 95.4  | 94.5  | 0.88   | 0.87  | 0.79            | 1285        | 1.9     | 1.9     | 2.7    | 4.49      | 87  | 1340 |                              |                      |                  |  |
| 1D355M-4       | 250              | 1485        | 104.4       | 443.8       | 421.6       | 406.4       | 6.5 | 95.1         | 94.7  | 93.4  | 0.9    | 0.89  | 0.85            | 1607        | 1.7     | 1.7     | 3.2    | 5.67      | 92  | 2020 |                              |                      |                  |  |
| 1D355L-4       | 315              | 1485        | 106.3       | 550.7       | 523.2       | 504.3       | 6.1 | 95.5         | 95.3  | 94.3  | 0.91   | 0.9   | 0.89            | 2026        | 1.5     | 1.5     | 3.3    | 6.66      | 92  | 2180 |                              |                      |                  |  |

•INL = No load Current    •IFL = Full Load Current    •IST = Locked Rotor Current    •TST = Locked Rotor Torque    •TPU = Pull Up Torque    •TM = Maximum Torque  
 •TFL = Full Load Torque

Motors rated 2 and 4 pole, 1kW to 100kW comply with Eff2.

Motors rated from 0.73kW up to and including 185kW comply with MEPS minimum Efficiency Test method B (refer AS 1359 - 5)

## 6 POLE - 1000 RPM SYNCHRONOUS SPEED 50 Hz

| MOTOR TYPE     | FULL OUTPUT kW | LOAD SPEED (RPM) | INL (AMPS) | IFL 380V (AMPS) | IFL 400V (AMPS) | IFL 415V (AMPS) | IST IFL | EFFICIENCY @: |       |       | POWER FACTOR @: |       |       | FULL LOAD TORQUE (Nm) | TST TFL | TPU TFL | TM TFL | M of I J (kgm <sup>2</sup> ) | NOISE LEVEL 1M dB(A) | NETT WEIGHT (kg) |     |
|----------------|----------------|------------------|------------|-----------------|-----------------|-----------------|---------|---------------|-------|-------|-----------------|-------|-------|-----------------------|---------|---------|--------|------------------------------|----------------------|------------------|-----|
|                |                |                  |            |                 |                 |                 |         | 100%FL        | 75%FL | 50%FL | 100%FL          | 75%FL | 50%FL |                       |         |         |        |                              |                      | 1D               | 1A1 |
| 1D(1A1)801-6   | 0.37           | 918              | 0.9        | 1.2             | 1.2             | 1.1             | 3.1     | 63.4          | 63.0  | 54.7  | 0.72            | 0.61  | 0.5   | 3.8                   | 1.6     | 1.6     | 1.9    | 0.0023                       | 40                   | 18               | 11  |
| 1D(1A1)802-6   | 0.55           | 919              | 1.2        | 1.7             | 1.6             | 1.5             | 3.3     | 69.1          | 70.1  | 63.1  | 0.72            | 0.62  | 0.49  | 5.7                   | 1.8     | 1.8     | 2      | 0.003                        | 41                   | 19.5             | 14  |
| 1D(1A1)90S-6   | 0.75           | 920              | 1.6        | 2.2             | 2.1             | 2.0             | 3.8     | 71.7          | 72.8  | 67.1  | 0.71            | 0.62  | 0.51  | 7.8                   | 1.9     | 1.9     | 2.3    | 0.0029                       | 48                   | 23               | 16  |
| 1D(1A1)90L-6   | 1.1            | 919              | 2          | 3.1             | 2.9             | 2.8             | 3.6     | 73.9          | 75.3  | 71.1  | 0.73            | 0.64  | 0.51  | 11                    | 2.1     | 2.1     | 2.5    | 0.0035                       | 53                   | 26               | 19  |
| 1D(1A1)100L-6  | 1.5            | 931              | 2.5        | 4.1             | 3.9             | 3.7             | 4.3     | 76.8          | 77.5  | 73.1  | 0.73            | 0.66  | 0.53  | 15                    | 2.3     | 2.3     | 2.8    | 0.0069                       | 52                   | 34               | 23  |
| 1D(1A1)112M-6  | 2.2            | 935              | 3          | 5.6             | 5.3             | 5.1             | 4.5     | 79            | 79.6  | 77.1  | 0.76            | 0.73  | 0.59  | 22                    | 1.9     | 1.7     | 2.2    | 0.0138                       | 60                   | 47               | 30  |
| 1D(1A1)132S-6  | 3              | 963              | 4.8        | 7.5             | 7.1             | 6.8             | 5.5     | 81.5          | 81.2  | 77.4  | 0.75            | 0.67  | 0.54  | 30                    | 1.9     | 1.6     | 2.9    | 0.0286                       | 60                   | 53               | 34  |
| 1D(1A1)132M1-6 | 4              | 963              | 5.7        | 9.6             | 9.1             | 8.8             | 5.9     | 83.3          | 83.0  | 80.1  | 0.76            | 0.68  | 0.56  | 40                    | 2.2     | 1.8     | 3.1    | 0.036                        | 60                   | 71               | 54  |
| 1D(1A1)132M2-6 | 5.5            | 967              | 7.8        | 13.0            | 12.3            | 11.9            | 6.4     | 84.6          | 84.0  | 81.0  | 0.76            | 0.68  | 0.56  | 54                    | 2.2     | 1.9     | 2.4    | 0.045                        | 60                   | 81               | 59  |
| 1D(1A1)160M-6  | 7.5            | 962              | 7.9        | 17.3            | 16.5            | 15.9            | 5.4     | 86.5          | 87.2  | 85.7  | 0.76            | 0.72  | 0.61  | 74                    | 1.8     | 1.7     | 2.4    | 0.088                        | 64                   | 122              | 88  |
| 1D(1A1)160L-6  | 11             | 965              | 10.5       | 24.7            | 23.4            | 22.6            | 5.8     | 88.0          | 88.7  | 87.7  | 0.77            | 0.74  | 0.62  | 109                   | 2.1     | 1.6     | 2.3    | 0.116                        | 64                   | 147              | 114 |
| 1D(1A1)180L-6  | 15             | 971              | 13.7       | 31.8            | 30.2            | 29.1            | 6       | 88.6          | 88.9  | 87.4  | 0.81            | 0.77  | 0.65  | 148                   | 2.4     | 1.5     | 2      | 0.207                        | 65                   | 179              | 143 |
| 1D(1A1)200L1-6 | 18.5           | 979              | 16.8       | 38.2            | 36.3            | 35.0            | 6.1     | 89.7          | 89.4  | 88.3  | 0.82            | 0.77  | 0.65  | 180                   | 2.1     | 1.7     | 3.1    | 0.315                        | 67                   | 258              | 205 |
| 1D(1A1)200L2-6 | 22             | 974              | 16.4       | 43.7            | 41.6            | 40.1            | 6       | 89.9          | 90.1  | 89.0  | 0.85            | 0.81  | 0.71  | 216                   | 2.1     | 1.4     | 2.7    | 0.36                         | 69                   | 270              | 210 |
| 1D225M-6       | 30             | 983              | 20.6       | 59.9            | 56.9            | 54.8            | 5.4     | 91.7          | 91.7  | 90.5  | 0.83            | 0.81  | 0.74  | 292                   | 2.5     | 1.4     | 1.8    | 0.547                        | 67                   | 328              |     |
| 1D250M-6       | 37             | 980              | 24.5       | 70.0            | 66.5            | 64.1            | 6.7     | 92.3          | 91.9  | 90.2  | 0.87            | 0.83  | 0.75  | 361                   | 2.1     | 1.8     | 2.8    | 0.834                        | 70                   | 426              |     |
| 1D280S-6       | 45             | 987              | 27         | 85.5            | 81.2            | 78.3            | 6.6     | 91.9          | 92.5  | 90.9  | 0.87            | 0.84  | 0.77  | 435                   | 2.4     | 1.6     | 3.4    | 1.39                         | 75                   | 517              |     |
| 1D280M1-6      | 55             | 984              | 29.7       | 102.7           | 97.5            | 94.0            | 6.6     | 92.5          | 93.2  | 92.4  | 0.88            | 0.87  | 0.82  | 534                   | 2.2     | 1.5     | 3.2    | 1.65                         | 77                   | 569              |     |
| 1D280M2-6      | 75             | 986              | 48.1       | 136.5           | 129.7           | 125.0           | 8.2     | 93.8          | 93.0  | 91.8  | 0.89            | 0.86  | 0.78  | 726                   | 2.9     | 1.8     | 3      | 3.21                         | 79                   | 670              |     |
| 1D315S-6       | 75             | 986              | 44.3       | 142.0           | 134.9           | 130.0           | 5.9     | 94.4          | 94.2  | 93.4  | 0.85            | 0.83  | 0.78  | 726                   | 2.1     | 1.7     | 3      | 4.11                         | 80                   | 1075             |     |
| 1D315M-6       | 90             | 985              | 50.8       | 170.4           | 161.9           | 156.0           | 6.1     | 94.4          | 94.2  | 93.0  | 0.85            | 0.83  | 0.77  | 873                   | 2.2     | 1.5     | 3.3    | 4.28                         | 79                   | 1120             |     |
| 1D315L1-6      | 110            | 987              | 56.7       | 207.4           | 197.0           | 189.9           | 6       | 94.8          | 94.9  | 94.1  | 0.85            | 0.85  | 0.79  | 1064                  | 2.2     | 1.7     | 3.1    | 5.45                         | 80                   | 1200             |     |
| 1D315L2-6      | 132            | 990              | 68.8       | 243.9           | 231.7           | 223.4           | 6.6     | 94.5          | 95.4  | 94.0  | 0.87            | 0.86  | 0.8   | 1273                  | 2.3     | 1.4     | 2.9    | 6.12                         | 80                   | 1290             |     |
| 1D355M1-6      | 160            | 991              | 93.3       | 290.8           | 276.2           | 266.3           | 6.8     | 95            | 95.0  | 93.0  | 0.88            | 0.87  | 0.82  | 1542                  | 1.8     | 1.3     | 2.5    | 8.85                         | 83                   | 1940             |     |
| 1D355M2-6      | 200            | 990              | 91.5       | 359.7           | 341.7           | 329.4           | 6.5     | 96            | 96.0  | 95.0  | 0.88            | 0.87  | 0.81  | 1929                  | 2       | 1.5     | 2.4    | 9.55                         | 84                   | 2040             |     |
| 1D355L-6       | 250            | 991              | 106.8      | 439.6           | 417.6           | 402.5           | 5.8     | 96            | 96.1  | 94.7  | 0.9             | 0.88  | 0.83  | 2409                  | 1.8     | 1.4     | 2.4    | 10.63                        | 83                   | 2220             |     |

•INL = No load Current    •IFL = Full Load Current    •IST = Locked Rotor Current    •TST = Locked Rotor Torque    •TPU = Pull Up Torque    •TM = Maximum Torque  
 •TFL = Full Load Torque

Motors rated 2 and 4 pole, 1kW to 100kW comply with Eff2.

Motors rated from 0.73kW up to and including 185kW comply with MEPS minimum Efficiency Test method B (refer AS 1359 - 5)

## 8 POLE - 750 RPM SYNCHRONOUS SPEED 50 Hz

| MOTOR TYPE     | FULL OUTPUT kW | LOAD SPEED (RPM) | INL (AMPS) | IFL 380V (AMPS) | IFL 400V (AMPS) | IFL 415V (AMPS) | IST IFL | EFFICIENCY @: |       |       | POWER FACTOR @: |       |       | FULL LOAD TORQUE (Nm) | TST TFL | TPU TFL | TM TFL | M of I J (kgm <sup>2</sup> ) | NOISE LEVEL 1M dB(A) | NETT WEIGHT (kg) |     |
|----------------|----------------|------------------|------------|-----------------|-----------------|-----------------|---------|---------------|-------|-------|-----------------|-------|-------|-----------------------|---------|---------|--------|------------------------------|----------------------|------------------|-----|
|                |                |                  |            |                 |                 |                 |         | 100%FL        | 75%FL | 50%FL | 100%FL          | 75%FL | 50%FL |                       |         |         |        |                              |                      | 1D               | 1A1 |
| 1D(1A1)801-8   | 0.18           | 680              | 0.6        | 0.8             | 0.7             | 0.7             | 3       | 58.6          | 53.8  | 44.0  | 0.62            | 0.55  | 0.45  | 2.5                   | 2       | 2       | 2.3    | 0.002                        | 42                   | 19               | 13  |
| 1D(1A1)802-8   | 0.25           | 694              | 0.9        | 1.0             | 1.0             | 1.0             | 3.1     | 60.5          | 54.8  | 44.3  | 0.6             | 0.53  | 0.45  | 3.4                   | 2       | 2       | 2.4    | 0.003                        | 45                   | 20               | 14  |
| 1D(1A1)90S-8   | 0.37           | 703              | 1.1        | 1.4             | 1.3             | 1.3             | 3.4     | 64.9          | 64.7  | 55.8  | 0.61            | 0.52  | 0.42  | 6                     | 1.9     | 1.9     | 2.5    | 0.004                        | 50                   | 30               | 18  |
| 1D(1A1)90L-8   | 0.55           | 700              | 1.6        | 2.1             | 2.0             | 1.9             | 3.4     | 68            | 66.9  | 59.1  | 0.59            | 0.5   | 0.4   | 7.5                   | 1.9     | 1.9     | 2.4    | 0.004                        | 48                   | 33               | 19  |
| 1D(1A1)100L1-8 | 0.75           | 697              | 1.9        | 1.9             | 1.8             | 1.7             | 3.5     | 70.2          | 69.8  | 62.4  | 0.86            | 0.56  | 0.45  | 10                    | 1.9     | 1.9     | 2.3    | 0.008                        | 49                   | 35               | 21  |
| 1D(1A1)100L2-8 | 1.1            | 691              | 2.5        | 3.4             | 3.2             | 3.1             | 3.7     | 72.8          | 74.0  | 68.7  | 0.68            | 0.58  | 0.45  | 15                    | 2       | 2       | 2.4    | 0.01                         | 49                   | 37               | 23  |
| 1D(1A1)112M1-8 | 1.5            | 694              | 3          | 4.4             | 4.2             | 4.0             | 4       | 76.7          | 77.5  | 74.2  | 0.68            | 0.58  | 0.46  | 21                    | 2.3     | 2.2     | 2.6    | 0.017                        | 49                   | 47               | 32  |
| 1D(1A1)112M2-8 | 2.2            | 690              | 3.5        | 6.1             | 5.8             | 5.6             | 4.5     | 77.1          | 77.0  | 74.1  | 0.71            | 0.61  | 0.49  | 30                    | 2.1     | 1.9     | 2.5    | 0.017                        | 49                   | 50               | 35  |
| 1D(1A1)132S-8  | 2.2            | 708              | 3.8        | 5.8             | 5.5             | 5.3             | 4.7     | 79.6          | 79.8  | 77.4  | 0.72            | 0.63  | 0.5   | 30                    | 2.1     | 2       | 2.6    | 0.031                        | 55                   | 65               | 50  |
| 1D(1A1)132M1-8 | 3              | 704              | 4.4        | 7.5             | 7.2             | 6.9             | 4.6     | 80.7          | 83.0  | 80.3  | 0.75            | 0.67  | 0.54  | 41                    | 2.2     | 2.1     | 2.6    | 0.04                         | 59                   | 72               | 57  |
| 1D(1A1)132M2-8 | 4              | 705              | 5.7        | 9.8             | 9.3             | 9.0             | 4.5     | 81.3          | 82.0  | 80.1  | 0.76            | 0.68  | 0.56  | 54                    | 2.1     | 2       | 2.5    | 0.04                         | 60                   | 77               | 62  |
| 1D(1A1)160M1-8 | 4              | 713              | 5.9        | 10.2            | 9.7             | 9.4             | 4.5     | 81.5          | 81.8  | 80.8  | 0.73            | 0.66  | 0.55  | 54                    | 1.8     | 1.7     | 2.3    | 0.075                        | 63                   | 109              | 87  |
| 1D(1A1)160M2-8 | 5.5            | 718              | 7.8        | 13.4            | 12.7            | 12.2            | 4.9     | 85.7          | 87.0  | 85.8  | 0.73            | 0.66  | 0.53  | 73                    | 2.1     | 2       | 2.9    | 0.093                        | 63                   | 121              | 98  |
| 1D(1A1)160L-8  | 7.5            | 719              | 9.6        | 17.5            | 16.6            | 16.0            | 6       | 86.8          | 87.5  | 86.5  | 0.75            | 0.68  | 0.55  | 100                   | 2.3     | 2       | 2.8    | 0.126                        | 64                   | 144              | 120 |
| 1D(1A1)180L-8  | 11             | 717              | 12.5       | 25.4            | 24.1            | 23.3            | 5.6     | 86.6          | 87.4  | 86.0  | 0.76            | 0.71  | 0.57  | 146                   | 2.3     | 1.9     | 2.8    | 0.203                        | 78                   | 172              | 140 |
| 1D(1A1)200L-8  | 15             | 729              | 15.7       | 33.6            | 31.9            | 30.7            | 5.6     | 89.3          | 89.7  | 88.4  | 0.76            | 0.72  | 0.6   | 196                   | 2.2     | 1.8     | 2.6    | 0.339                        | 77                   | 265              | 215 |
| 1D225S-8       | 18.5           | 731              | 20.2       | 42.3            | 40.2            | 38.7            | 6       | 89.8          | 90.0  | 89.2  | 0.74            | 0.71  | 0.63  | 242                   | 2       | 1.7     | 3      | 0.491                        | 79                   | 315              |     |
| 1D225M-8       | 22             | 729              | 20.7       | 48.0            | 45.6            | 44.0            | 3.2     | 90.4          | 90.8  | 90.0  | 0.77            | 0.73  | 0.62  | 288                   | 2.1     | 1.8     | 2.7    | 0.547                        | 79                   | 325              |     |
| 1D250M-8       | 30             | 734              | 28.4       | 63.0            | 59.9            | 57.7            | 5.7     | 90.4          | 91.0  | 89.0  | 0.8             | 0.75  | 0.64  | 390                   | 2.2     | 2.1     | 2.5    | 0.83                         | 80                   | 431              |     |
| 1D280S-8       | 37             | 737              | 30         | 75.8            | 72.1            | 69.5            | 5.6     | 91.5          | 91.5  | 90.4  | 0.81            | 0.77  | 0.68  | 479                   | 2.2     | 1.8     | 3.8    | 1.39                         | 79                   | 522              |     |
| 1D280M1-8      | 45             | 737              | 35.6       | 90.7            | 86.2            | 83.1            | 5.3     | 91.9          | 92.0  | 90.0  | 0.82            | 0.76  | 0.65  | 583                   | 2.1     | 2       | 3      | 1.65                         | 79                   | 577              |     |
| 1D280M2-8      | 55             | 738              | 43.4       | 111.3           | 105.7           | 101.9           | 6       | 92.7          | 91.8  | 90.8  | 0.81            | 0.78  | 0.68  | 712                   | 2.2     | 1.6     | 2.5    | 3.65                         | 79                   | 670              |     |
| 1D315S-8       | 55             | 738              | 41.3       | 109.0           | 103.5           | 99.8            | 5.6     | 93.5          | 93.1  | 92.7  | 0.82            | 0.77  | 0.69  | 712                   | 1.8     | 1.6     | 2.7    | 4.79                         | 79                   | 1040             |     |
| 1D315M-8       | 75             | 740              | 50         | 146.5           | 139.2           | 134.2           | 6.1     | 93.7          | 94.0  | 91.8  | 0.83            | 0.79  | 0.71  | 968                   | 2.1     | 1.3     | 2.7    | 5.58                         | 80                   | 1150             |     |
| 1D315L1-8      | 90             | 739              | 66.3       | 178.0           | 169.1           | 163.0           | 6.4     | 93.7          | 93.8  | 92.0  | 0.82            | 0.76  | 0.68  | 1163                  | 2.4     | 1.7     | 2.6    | 6.37                         | 80                   | 1235             |     |
| 1D315L2-8      | 110            | 739              | 75         | 216.6           | 205.8           | 198.3           | 6.2     | 94.1          | 94.1  | 92.7  | 0.82            | 0.79  | 0.71  | 1422                  | 2.3     | 2       | 2.5    | 7.23                         | 80                   | 1325             |     |
| 1D355M1-8      | 132            | 743              | 86.8       | 250.8           | 238.3           | 229.6           | 5.9     | 95.2          | 94.9  | 93.7  | 0.84            | 0.8   | 0.71  | 1697                  | 1.7     | 1       | 2.2    | 10.55                        | 79                   | 1960             |     |
| 1D355M2-8      | 160            | 743              | 105.6      | 307.7           | 292.3           | 281.7           | 5.3     | 95.2          | 95.1  | 94.1  | 0.83            | 0.81  | 0.73  | 2056                  | 1.5     | 1.1     | 2.2    | 11.73                        | 79                   | 2020             |     |
| 1D355L-8       | 200            | 743              | 111        | 369.2           | 350.8           | 338.1           | 5.2     | 95.7          | 95.7  | 94.9  | 0.86            | 0.86  | 0.77  | 2571                  | 1.3     | 1.2     | 3.2    | 12.86                        | 79                   | 2190             |     |

•INL = No load Current •IFL = Full Load Current •IST = Locked Rotor Current •TST = Locked Rotor Torque •TPU = Pull Up Torque •TM = Maximum Torque  
•TFL = Full Load Torque

Motors rated 2 and 4 pole, 1kW to 100kW comply with Eff2.

Motors rated from 0.73kW up to and including 185kW comply with MEPS minimum Efficiency Test method B (refer AS 1359 - 5)

## 2 POLE - 3600 RPM SYNCHRONOUS SPEED 60 Hz

| MOTOR TYPE     | FULL LOAD |                  |            |                 |                 |                 |                 |                 | EFFICIENCY @: |        |       | POWER FACTOR @: |        |       | FULL LOAD TORQUE |      | TST TFL | TPU TFL | TM TFL | M of I J | NOISE LEVEL 1M | NETT WEIGHT (kg) |                     |
|----------------|-----------|------------------|------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------|--------|-------|-----------------|--------|-------|------------------|------|---------|---------|--------|----------|----------------|------------------|---------------------|
|                | OUTPUT kW | LOAD SPEED (RPM) | INL (AMPS) | IFL 380V (AMPS) | IFL 220V (AMPS) | IFL 380V (AMPS) | IFL 440V (AMPS) | IFL 460V (AMPS) | IST IFL       | 100%FL | 75%FL | 50%FL           | 100%FL | 75%FL | 50%FL            | (Nm) |         |         |        |          |                | (Nm)             | (kgm <sup>2</sup> ) |
| 1AI63-2        | 0.2       | 3384             | 0.24       | 0.9             | 0.5             | 0.5             | 0.4             | 4.2             | 63            | 62.0   | 58.0  | 0.82            | 0.75   | 0.67  | 0.5              | 2.6  | 2.6     | 3.2     | 0.0003 | 56       | 7              |                  |                     |
| 1AI711-2       | 0.4       | 3427             | 0.55       | 1.7             | 1.0             | 0.9             | 0.8             | 4.5             | 71            | 71.0   | 68.0  | 0.8             | 0.73   | 0.69  | 1.0              | 2.5  | 2.5     | 3.0     | 0.0006 | 57       | 10             |                  |                     |
| 1AI712-2       | 0.6       | 3447             | 0.63       | 2.3             | 1.3             | 1.2             | 1.1             | 5.4             | 76            | 75.0   | 69.0  | 0.82            | 0.74   | 0.58  | 1.5              | 3.4  | 3.2     | 3.6     | 0.0007 | 56       | 10             |                  |                     |
| 1D(1AI)801-2   | 0.8       | 3448             | 0.71       | 3.1             | 1.8             | 1.6             | 1.5             | 5.1             | 75            | 74.2   | 71.1  | 0.84            | 0.8    | 0.66  | 2.1              | 2.3  | 1.7     | 2.6     | 0.0008 | 56       | 19             | 11               |                     |
| 1D(1AI)802-2   | 1.1       | 3446             | 0.95       | 4.4             | 2.5             | 2.2             | 2.1             | 5.1             | 78.4          | 78.2   | 75.0  | 0.84            | 0.78   | 0.66  | 3.0              | 2.3  | 2.2     | 2.6     | 0.0009 | 57       | 20             | 12               |                     |
| 1D(1AI)90S-2   | 1.5       | 3445             | 1.1        | 5.8             | 3.4             | 2.9             | 2.8             | 5.6             | 79.8          | 79.8   | 77.0  | 0.85            | 0.81   | 0.7   | 4.1              | 3.0  | 2.9     | 3.3     | 0.0012 | 65       | 26             | 16               |                     |
| 1D(1AI)90L-2   | 2.2       | 3884             | 1.50       | 8.3             | 4.8             | 4.1             | 4.0             | 5.6             | 82.1          | 82.7   | 80.0  | 0.85            | 0.81   | 0.71  | 6.1              | 2.8  | 2.5     | 3.1     | 0.0014 | 65       | 28             | 18               |                     |
| 1D(1AI)100L-2  | 3         | 3453             | 1.74       | 10.7            | 6.2             | 5.4             | 5.1             | 6.4             | 83.3          | 84.3   | 82.9  | 0.88            | 0.84   | 0.74  | 8.3              | 3.2  | 3.1     | 3.8     | 0.0039 | 71       | 42             | 27               |                     |
| 1D(1AI)112M1-2 | 4         | 3469             | 1.98       | 13.6            | 7.9             | 6.8             | 6.5             | 6.1             | 84.8          | 85.4   | 84.4  | 0.91            | 0.87   | 0.8   | 11.0             | 2.5  | 2.4     | 3.3     | 0.0055 | 71       | 47             | 31               |                     |
| 1D(1AI)112M2-2 | 5.5       | 3491             | 2.69       | 18.2            | 10.5            | 9.1             | 8.7             | 6.9             | 87.2          | 87.9   | 86.8  | 0.91            | 0.88   | 0.79  | 15.0             | 2.8  | 2.7     | 3.3     | 0.007  | 75       | 54             | 35               |                     |
| 1D(1AI)132S1-2 | 5.5       | 3505             | 2.93       | 18.7            | 10.8            | 9.3             | 8.9             | 7.1             | 85.9          | 86.0   | 83.4  | 0.9             | 0.86   | 0.78  | 15.0             | 2.9  | 2.4     | 3.8     | 0.0109 | 75       | 69             | 48               |                     |
| 1D(1AI)132S2-2 | 7.5       | 3512             | 3.56       | 25.1            | 14.5            | 12.5            | 12.0            | 6.9             | 87.2          | 86.8   | 84.8  | 0.9             | 0.87   | 0.8   | 20.4             | 2.7  | 2.3     | 3.6     | 0.013  | 76       | 72             | 51               |                     |
| 1D(1AI)132M-2  | 11        | 3502             | 4.67       | 35.8            | 20.8            | 17.9            | 17.1            | 7.0             | 88.5          | 88.6   | 87.6  | 0.91            | 0.88   | 0.81  | 30.0             | 2.5  | 2.3     | 3.4     | 0.028  | 76       | 84             | 63               |                     |
| 1D(1AI)160M1-2 | 11        | 3529             | 4.83       | 36.4            | 21.1            | 18.2            | 17.4            | 6.5             | 89            | 89.0   | 87.5  | 0.89            | 0.87   | 0.8   | 29.8             | 2.2  | 1.9     | 3.2     | 0.038  | 83       | 124            | 100              |                     |
| 1D(1AI)160M2-2 | 15        | 3533             | 6.57       | 49.1            | 28.4            | 24.5            | 23.5            | 6.7             | 90.1          | 90.4   | 89.2  | 0.89            | 0.86   | 0.8   | 40.5             | 2.4  | 2.0     | 3.3     | 0.045  | 85       | 134            | 107              |                     |
| 1D(1AI)160L-2  | 18.5      | 3535             | 6.49       | 59.5            | 34.5            | 29.8            | 28.5            | 7.1             | 90.6          | 90.0   | 89.6  | 0.9             | 0.88   | 0.81  | 50.5             | 2.5  | 1.8     | 3.2     | 0.055  | 84       | 152            | 122              |                     |
| 1D(1AI)180M-2  | 22        | 3546             | 9.34       | 70.8            | 41.0            | 35.4            | 33.9            | 6.7             | 90.6          | 90.5   | 87.8  | 0.9             | 0.88   | 0.81  | 59.2             | 2.6  | 1.4     | 3.4     | 0.075  | 86       | 174            | 145              |                     |
| 1D(1AI)200L1-2 | 30        | 3546             | 11.40      | 96.7            | 56.0            | 48.3            | 46.2            | 6.0             | 91.5          | 91.0   | 88.8  | 0.89            | 0.87   | 0.82  | 80.8             | 2.4  | 1.8     | 2.8     | 0.124  | 89       | 265            | 220              |                     |
| 1D(1AI)200L2-2 | 37        | 3552             | 12.67      | 117.0           | 67.7            | 58.5            | 56.0            | 6.5             | 92.2          | 91.8   | 89.9  | 0.9             | 0.88   | 0.83  | 99.5             | 2.6  | 1.7     | 3.0     | 0.139  | 91       | 285            | 240              |                     |
| 1D225M-2       | 45        | 3554             | 16.07      | N/A             | 81.0            | 69.9            | 66.9            | 6.4             | 92.8          | 92.4   | 90.4  | 0.91            | 0.9    | 0.85  | 120.9            | 2.6  | 2.6     | 3.5     | 0.233  | 91       | 337            |                  |                     |
| 1D250M1-2      | 55        | 3557             | 23.83      | N/A             | 101.7           | 87.9            | 84.0            | 7.0             | 92.3          | 92.0   | 89.7  | 0.89            | 0.88   | 0.81  | 147.7            | 2.7  | 1.9     | 3.7     | 0.312  | 91       | 430            |                  |                     |
| 1D250M2-2      | 75        | 3574             | 27.71      | N/A             | 134.1           | 115.8           | 110.8           | 6.4             | 94.4          | 93.8   | 92.4  | 0.9             | 0.87   | 0.81  | 200.4            | 2.1  | 1.6     | 3.6     | 0.412  | 94       | 505            |                  |                     |
| 1D280S-2       | 75        | 3575             | 27.00      | N/A             | 135.0           | 116.6           | 111.5           | 6.5             | 93.8          | 93.0   | 90.6  | 0.9             | 0.89   | 0.84  | 200.4            | 2.3  | 1.7     | 3.4     | 0.597  | 93       | 535            |                  |                     |
| 1D280M1-2      | 90        | 3571             | 28.58      | N/A             | 158.0           | 136.4           | 130.5           | 6.3             | 94.1          | 93.7   | 92.1  | 0.92            | 0.91   | 0.88  | 240.7            | 2.2  | 1.9     | 3.4     | 0.675  | 95       | 578            |                  |                     |
| 1D280M2-2      | 110       | 3570             | 28.74      | N/A             | 192.4           | 166.2           | 159.0           | 6.6             | 94.4          | 94.3   | 93.2  | 0.92            | 0.93   | 0.91  | 294.3            | 2.9  | 1.8     | 3.1     | 0.86   | 95       | 620            |                  |                     |
| 1D315S-2       | 110       | 3575             | 35.86      | N/A             | 194.3           | 167.8           | 160.5           | 5.5             | 94.5          | 93.9   | 92.0  | 0.91            | 0.89   | 0.83  | 293.9            | 2.5  | 2       | 2.8     | 1.18   | 96       | 1100           |                  |                     |
| 1D315M-2       | 132       | 3583             | 43.38      | N/A             | 230.0           | 198.6           | 190.0           | 6.7             | 94.8          | 94.9   | 93.1  | 0.92            | 0.91   | 0.86  | 315.8            | 2.5  | 2       | 2.9     | 1.55   | 98       | 1153           |                  |                     |
| 1D315L1-2      | 160       | 3579             | 48.37      | N/A             | 277.0           | 239.2           | 228.8           | 7.2             | 95.4          | 94.8   | 93.6  | 0.92            | 0.92   | 0.89  | 427.0            | 2.8  | 1.8     | 3.1     | 1.76   | 98       | 1195           |                  |                     |
| 1D315L2-2      | 200       | 3572             | 53.44      | N/A             | 348.0           | 300.6           | 287.5           | 7.9             | 94.9          | 94.8   | 93.4  | 0.92            | 0.91   | 0.88  | 534.7            | 2.8  | 2       | 3.2     | 2.02   | 98       | 1255           |                  |                     |
| 1D355M-2       | 250       | 3584             | 127.06     | N/A             | 482.2           | 416.5           | 398.4           | 6.2             | 94.9          | 94.1   | 92.1  | 0.83            | 0.8    | 0.72  | 666.0            | 1.8  | 1.5     | 2.6     | 3.56   | 100      | 1920           |                  |                     |
| 1D355L-2       | 315       | 3586             | 149.78     | N/A             | 595.4           | 514.2           | 491.8           | 5.7             | 95.7          | 95.1   | 93.6  | 0.84            | 0.81   | 0.73  | 838.7            | 1.8  | 1.5     | 3.1     | 4.16   | 100      | 2060           |                  |                     |

•INL = No load Current    •IFL = Full Load Current    •IST = Locked Rotor Current    •TST = Locked Rotor Torque    •TPU = Pull Up Torque    •TM = Maximum Torque  
 •TFL = Full Load Torque

For use in countries excluding Australia and New Zealand

## 4 POLE - 1800 RPM SYNCHRONOUS SPEED 60 Hz

| MOTOR TYPE     | FULL LOAD |                  |            |                 |                 |                 |                 |                 | EFFICIENCY @: |        |       | POWER FACTOR @: |        |       | FULL LOAD TORQUE |      | TST TFL | TPU TFL | TM TFL | M of I J | NOISE LEVEL |                     | NETT WEIGHT (kg) |
|----------------|-----------|------------------|------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------|--------|-------|-----------------|--------|-------|------------------|------|---------|---------|--------|----------|-------------|---------------------|------------------|
|                | OUTPUT kW | LOAD SPEED (RPM) | INL (AMPS) | IFL 380V (AMPS) | IFL 220V (AMPS) | IFL 380V (AMPS) | IFL 440V (AMPS) | IFL 460V (AMPS) | IST IFL       | 100%FL | 75%FL | 50%FL           | 100%FL | 75%FL | 50%FL            | (Nm) |         |         |        |          | (Nm)        | (kgm <sup>2</sup> ) |                  |
| 1AI632-4       | 0.18      | 1672             | 0.40       | 1.1             | 0.6             | 0.5             | 0.5             | 3.2             | 63            | 63.0   | 57.0  | 0.71            | 0.61   | 0.53  | 1.0              | 2.3  | 2.3     | 2.6     | 0.0006 | 50       | 7           |                     |                  |
| 1AI712-4       | 0.37      | 1614             | 0.63       | 1.9             | 1.1             | 1.0             | 0.9             | 3.6             | 69            | 72.0   | 70.0  | 0.73            | 0.64   | 0.53  | 2.1              | 2.4  | 2.3     | 2.6     | 0.0016 | 48       | 10          |                     |                  |
| 1D(1AI)801-4   | 0.55      | 1712             | 0.79       | 2.7             | 1.5             | 1.3             | 1.3             | 4.2             | 72.6          | 73.1   | 69.2  | 0.75            | 0.67   | 0.54  | 3.1              | 2.3  | 1.9     | 2.6     | 0.002  | 45       | 18          | 10                  |                  |
| 1D(1AI)802-4   | 0.75      | 1710             | 1.03       | 3.6             | 2.1             | 1.8             | 1.7             | 4.0             | 73.8          | 74.5   | 70.4  | 0.75            | 0.66   | 0.53  | 4.2              | 2.2  | 1.9     | 2.5     | 0.002  | 55       | 19          | 11                  |                  |
| 1D(1AI)90S-4   | 1.1       | 1710             | 1.43       | 5.0             | 2.9             | 2.5             | 2.4             | 4.1             | 75.5          | 76.4   | 74.5  | 0.77            | 0.68   | 0.55  | 6.1              | 2.0  | 2.0     | 2.5     | 0.0021 | 57       | 25          | 15                  |                  |
| 1D(1AI)90L-4   | 1.5       | 1704             | 1.58       | 6.5             | 3.7             | 3.2             | 3.1             | 4.3             | 78            | 79.7   | 78.6  | 0.78            | 0.7    | 0.57  | 8.4              | 2.5  | 2.4     | 2.6     | 0.003  | 58       | 26          | 17                  |                  |
| 1D(1AI)100L1-4 | 2.2       | 1715             | 2.30       | 9.0             | 5.2             | 4.5             | 4.3             | 5.0             | 80.3          | 81.1   | 79.3  | 0.8             | 0.72   | 0.59  | 12.2             | 2.6  | 2.6     | 2.9     | 0.007  | 57       | 34          | 24                  |                  |
| 1D(1AI)100L2-4 | 3         | 1728             | 2.77       | 12.0            | 6.9             | 6.0             | 5.7             | 5.4             | 82.0          | 82.7   | 81.0  | 0.8             | 0.74   | 0.62  | 16.6             | 2.5  | 2.5     | 3.2     | 0.007  | 57       | 38          | 28                  |                  |
| 1D(1AI)112M-4  | 4         | 1729             | 3.33       | 15.3            | 8.8             | 7.6             | 7.3             | 5.5             | 83.8          | 84.9   | 83.4  | 0.82            | 0.77   | 0.66  | 22.1             | 2.6  | 2.6     | 3.2     | 0.0095 | 60       | 50          | 36                  |                  |
| 1D(1AI)132S-4  | 5.5       | 1752             | 4.35       | 20.4            | 11.8            | 10.2            | 9.7             | 6.2             | 86.4          | 87.2   | 85.5  | 0.82            | 0.76   | 0.66  | 30.0             | 2.3  | 2.3     | 3.4     | 0.0214 | 61       | 70          | 49                  |                  |
| 1D(1AI)132M1-4 | 7.5       | 1747             | 4.75       | 26.1            | 15.1            | 13.0            | 12.5            | 6.6             | 87.8          | 88.2   | 87.3  | 0.86            | 0.81   | 0.71  | 41.0             | 2.4  | 2.4     | 3.1     | 0.0296 | 61       | 80          | 58                  |                  |
| 1D(1AI)132M2-4 | 11        | 1747             | 6.33       | 38.3            | 22.1            | 19.1            | 18.3            | 5.9             | 88.8          | 89.4   | 88.1  | 0.85            | 0.8    | 0.71  | 60.1             | 1.9  | 1.9     | 2.8     | 0.062  | 68       | 89          | 67                  |                  |
| 1D(1AI)160M-4  | 11        | 1747             | 6.57       | 38.7            | 22.4            | 19.3            | 18.5            | 6.5             | 88.9          | 87.4   | 83.2  | 0.84            | 0.82   | 0.76  | 60.1             | 1.9  | 1.9     | 2.8     | 0.075  | 72       | 124         | 100                 |                  |
| 1D(1AI)160L-4  | 15        | 1758             | 10.05      | 52.6            | 30.5            | 26.3            | 25.2            | 7.0             | 90.1          | 88.8   | 82.3  | 0.83            | 0.79   | 0.74  | 81.5             | 2.0  | 2.0     | 3.7     | 0.092  | 74       | 147         | 120                 |                  |
| 1D(1AI)180M-4  | 18.5      | 1772             | 10.61      | 61.7            | 35.7            | 30.8            | 29.5            | 6.5             | 90.5          | 91.8   | 89.9  | 0.87            | 0.82   | 0.73  | 99.7             | 2.0  | 2.0     | 3.6     | 0.139  | 69       | 172         | 135                 |                  |
| 1D(1AI)180L-4  | 22        | 1769             | 11.56      | 71.1            | 41.2            | 35.6            | 34.0            | 6.8             | 91.2          | 91.2   | 89.9  | 0.89            | 0.85   | 0.76  | 118.8            | 2.2  | 2.2     | 3.6     | 0.158  | 69       | 184         | 145                 |                  |
| 1D(1AI)200L-4  | 30        | 1773             | 14.41      | 96.8            | 56.0            | 48.4            | 46.3            | 6.0             | 91.4          | 91.3   | 90.2  | 0.89            | 0.88   | 0.8   | 161.6            | 1.9  | 1.9     | 3.3     | 0.262  | 78       | 286         | 230                 |                  |
| 1D225S-4       | 37        | 1777             | 17.81      | N/A             | 70.9            | 61.2            | 58.6            | 6.0             | 92.2          | 92.2   | 91.0  | 0.86            | 0.85   | 0.77  | 198.9            | 1.6  | 1.6     | 2.8     | 0.406  | 80       | 338         |                     |                  |
| 1D225M-4       | 45        | 1778             | 20.82      | N/A             | 85.0            | 73.4            | 70.2            | 6.3             | 92.5          | 92.7   | 91.5  | 0.87            | 0.85   | 0.77  | 241.7            | 1.8  | 1.8     | 3.2     | 0.469  | 82       | 358         |                     |                  |
| 1D250M1-4      | 55        | 1776             | 25.73      | N/A             | 103.3           | 89.2            | 85.3            | 5.9             | 93.0          | 92.9   | 91.9  | 0.87            | 0.84   | 0.78  | 295.8            | 1.8  | 1.8     | 2.9     | 0.66   | 83       | 449         |                     |                  |
| 1D250M2-4      | 75        | 1782             | 37.84      | N/A             | 141.0           | 121.7           | 116.4           | 5.9             | 94.0          | 93.8   | 92.6  | 0.86            | 0.83   | 0.74  | 401.8            | 1.6  | 1.6     | 3.2     | 0.88   | 83       | 535         |                     |                  |
| 1D280S-4       | 75        | 1783             | 30.24      | N/A             | 136.8           | 118.1           | 113.0           | 5.4             | 93.6          | 93.4   | 92.0  | 0.89            | 0.87   | 0.82  | 401.6            | 1.7  | 1.7     | 3.1     | 1.12   | 85       | 563         |                     |                  |
| 1D280M1-4      | 90        | 1784             | 34.68      | N/A             | 163.1           | 140.9           | 134.7           | 5.9             | 93.9          | 92.8   | 0.89  | 0.87            | 0.81   | 0.81  | 481.6            | 1.6  | 1.6     | 3.2     | 1.46   | 87       | 634         |                     |                  |
| 1D280M2-4      | 110       | 1783             | 42.20      | N/A             | 196.7           | 169.96          | 162.5           | 5.7             | 94.4          | 93.5   | 0.9   | 0.89            | 0.82   | 0.82  | 589.0            | 2.2  | 2.2     | 2.9     | 2.68   | 87       | 720         |                     |                  |
| 1D315S-4       | 110       | 1784             | 41.01      | N/A             | 200.8           | 173.4           | 165.8           | 5.4             | 94.6          | 94.5   | 94.1  | 0.88            | 0.88   | 0.84  | 588.7            | 1.6  | 1.6     | 3.1     | 3.11   | 85       | 1125        |                     |                  |
| 1D315M-4       | 132       | 1785             | 53.44      | N/A             | 246.3           | 212.7           | 203.4           | 6.5             | 94.7          | 94.6   | 92.9  | 0.86            | 0.86   | 0.82  | 706.0            | 1.6  | 1.6     | 3.4     | 3.29   | 86       | 1175        |                     |                  |
| 1D315L1-4      | 160       | 1787             | 65.15      | N/A             | 298.8           | 258.1           | 246.9           | 5.4             | 95.7          | 95.0   | 94.1  | 0.85            | 0.85   | 0.78  | 854.9            | 1.7  | 1.7     | 3.2     | 3.79   | 85       | 1240        |                     |                  |
| 1D315L2-4      | 200       | 1786             | 81.15      | N/A             | 359.3           | 310.3           | 296.8           | 4.4             | 96.1          | 95.4   | 94.5  | 0.88            | 0.87   | 0.79  | 1069.2           | 1.9  | 1.9     | 2.8     | 4.49   | 87       | 1340        |                     |                  |
| 1D355M-4       | 250       | 1786             | 82.65      | N/A             | 443.8           | 383.3           | 366.6           | 6.0             | 95.1          | 94.7   | 93.4  | 0.9             | 0.89   | 0.85  | 1336.4           | 1.7  | 1.7     | 3.3     | 5.67   | 92       | 2020        |                     |                  |
| 1D355L-4       | 315       | 1785             | 84.15      | N/A             | 550.7           | 475.6           | 454.9           | 5.6             | 95.5          | 95.3   | 94.3  | 0.91            | 0.9    | 0.89  | 1684.8           | 1.5  | 1.5     | 3.4     | 6.66   | 92       | 2180        |                     |                  |

- INL = No load Current    •IFL = Full Load Current    •IST = Locked Rotor Current    •TST = Locked Rotor Torque    •TPU = Pull Up Torque    •TM = Maximum Torque
- TFL = Full Load Torque

For use in countries excluding Australia and New Zealand

## 6 POLE - 1200 RPM SYNCHRONOUS SPEED 60 Hz

| MOTOR TYPE     | FULL LOAD |                  |            |                 |                 |                 |                 |                 | EFFICIENCY @: |        |       | POWER FACTOR @: |        |       | FULL LOAD |             |         | NOISE   |        |                              | NETT WEIGHT      |     |
|----------------|-----------|------------------|------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------|--------|-------|-----------------|--------|-------|-----------|-------------|---------|---------|--------|------------------------------|------------------|-----|
|                | OUTPUT kW | LOAD SPEED (RPM) | INL (AMPS) | IFL 380V (AMPS) | IFL 220V (AMPS) | IFL 380V (AMPS) | IFL 440V (AMPS) | IFL 460V (AMPS) | IST IFL       | 100%FL | 75%FL | 50%FL           | 100%FL | 75%FL | 50%FL     | TORQUE (Nm) | TST TFL | TPU TFL | TM TFL | M of I J (kgm <sup>2</sup> ) | LEVEL 1M (dB(A)) | 1D  |
| 1D(1AI)801-6   | 0.37      | 1120             | 0.71       | 2.1             | 1.2             | 1.1             | 1.0             | 2.9             | 63.4          | 63.0   | 54.7  | 0.72            | 0.61   | 0.5   | 3.2       | 1.6         | 1.6     | 1.9     | 0.0023 | 42                           | 18               | 11  |
| 1D(1AI)802-6   | 0.55      | 1121             | 0.95       | 2.9             | 1.7             | 1.5             | 1.4             | 3.0             | 69.1          | 70.1   | 63.1  | 0.72            | 0.62   | 0.49  | 4.7       | 1.8         | 1.8     | 2.0     | 0.003  | 43                           | 19.5             | 14  |
| 1D(1AI)90S-6   | 0.75      | 1122             | 1.27       | 3.9             | 2.2             | 1.9             | 1.8             | 3.2             | 71.7          | 72.8   | 67.1  | 0.71            | 0.62   | 0.51  | 6.4       | 1.9         | 1.9     | 2.4     | 0.0029 | 51                           | 23               | 16  |
| 1D(1AI)90L-6   | 1.1       | 1121             | 1.58       | 5.4             | 3.1             | 2.7             | 2.6             | 3.3             | 73.9          | 75.3   | 71.1  | 0.73            | 0.64   | 0.51  | 9.4       | 2.2         | 2.2     | 2.6     | 0.0035 | 56                           | 26               | 19  |
| 1D(1AI)100L-6  | 1.5       | 1133             | 1.98       | 7.0             | 4.1             | 3.5             | 3.4             | 4.0             | 76.8          | 77.5   | 73.1  | 0.73            | 0.66   | 0.53  | 12.6      | 2.4         | 2.4     | 2.9     | 0.0069 | 55                           | 34               | 23  |
| 1D(1AI)112M-6  | 2.2       | 1137             | 2.38       | 9.6             | 5.6             | 4.8             | 4.6             | 4.2             | 79            | 79.6   | 77.1  | 0.76            | 0.73   | 0.59  | 18.5      | 1.9         | 1.7     | 2.3     | 0.0138 | 64                           | 47               | 30  |
| 1D(1AI)132S-6  | 3         | 1164             | 3.80       | 12.9            | 7.5             | 6.4             | 6.2             | 5.1             | 81.5          | 81.2   | 77.4  | 0.75            | 0.67   | 0.54  | 24.6      | 1.9         | 1.6     | 3.0     | 0.0286 | 64                           | 53               | 34  |
| 1D(1AI)132M1-6 | 4         | 1164             | 4.51       | 16.6            | 9.6             | 8.3             | 7.9             | 5.4             | 83.3          | 83.0   | 80.1  | 0.76            | 0.68   | 0.56  | 32.8      | 2.3         | 1.8     | 3.2     | 0.036  | 64                           | 71               | 54  |
| 1D(1AI)132M2-6 | 5.5       | 1168             | 6.18       | 22.4            | 13.0            | 11.2            | 10.7            | 5.9             | 84.6          | 84.0   | 81.0  | 0.76            | 0.68   | 0.56  | 45.0      | 2.3         | 1.9     | 2.5     | 0.045  | 64                           | 81               | 59  |
| 1D(1AI)160M-6  | 7.5       | 1163             | 6.25       | 29.9            | 17.3            | 15.0            | 14.3            | 5.0             | 86.5          | 87.2   | 85.7  | 0.76            | 0.72   | 0.61  | 61.6      | 1.8         | 1.7     | 2.5     | 0.088  | 68                           | 122              | 88  |
| 1D(1AI)160L-6  | 11        | 1166             | 8.31       | 42.6            | 24.7            | 21.3            | 20.4            | 5.4             | 88.0          | 88.7   | 87.7  | 0.77            | 0.74   | 0.62  | 90.1      | 2.2         | 1.6     | 2.4     | 0.116  | 68                           | 147              | 114 |
| 1D(1AI)180L-6  | 15        | 1172             | 10.85      | 54.9            | 31.8            | 27.4            | 26.2            | 5.5             | 88.6          | 88.9   | 87.4  | 0.81            | 0.77   | 0.65  | 122.3     | 2.5         | 1.5     | 2.0     | 0.207  | 69                           | 179              | 143 |
| 1D(1AI)200L1-6 | 18.5      | 1179             | 13.30      | 66.0            | 38.2            | 33.0            | 31.6            | 5.6             | 89.7          | 89.4   | 88.3  | 0.82            | 0.77   | 0.65  | 149.8     | 2.2         | 1.7     | 3.2     | 0.315  | 71                           | 258              | 205 |
| 1D(1AI)200L2-6 | 22        | 1175             | 12.98      | N/A             | 43.7            | 37.8            | 36.1            | 5.5             | 89.9          | 90.1   | 89.0  | 0.85            | 0.81   | 0.71  | 178.9     | 2.2         | 1.4     | 2.8     | 0.36   | 73                           | 270              | 210 |
| 1D225M-6       | 30        | 1183             | 16.31      | N/A             | 59.9            | 51.7            | 49.5            | 5.0             | 91.7          | 91.7   | 90.5  | 0.83            | 0.81   | 0.74  | 242.1     | 2.6         | 1.4     | 1.8     | 0.547  | 71                           | 328              |     |
| 1D250M-6       | 37        | 1180             | 19.40      | N/A             | 70.0            | 60.5            | 57.8            | 6.2             | 92.3          | 91.9   | 90.2  | 0.87            | 0.83   | 0.75  | 299.3     | 2.2         | 1.8     | 2.9     | 0.834  | 74                           | 426              |     |
| 1D280S-6       | 45        | 1187             | 21.38      | N/A             | 85.5            | 73.9            | 70.6            | 6.1             | 91.9          | 92.5   | 90.9  | 0.87            | 0.84   | 0.77  | 361.9     | 2.5         | 1.6     | 3.5     | 1.39   | 80                           | 517              |     |
| 1D280M1-6      | 55        | 1184             | 23.51      | N/A             | 102.7           | 88.7            | 84.8            | 6.1             | 92.5          | 93.2   | 92.4  | 0.88            | 0.87   | 0.82  | 443.5     | 2.3         | 1.5     | 3.3     | 1.65   | 82                           | 569              |     |
| 1D280M2-6      | 75        | 1186             | 38.08      | N/A             | 136.5           | 117.9           | 112.8           | 7.6             | 93.8          | 93.0   | 91.8  | 0.89            | 0.86   | 0.78  | 603.7     | 3.0         | 1.8     | 3.1     | 3.21   | 84                           | 670              |     |
| 1D315S-6       | 75        | 1186             | 35.07      | N/A             | 142.0           | 122.6           | 117.3           | 5.4             | 94.4          | 94.2   | 93.4  | 0.85            | 0.83   | 0.78  | 603.7     | 2.2         | 1.7     | 3.1     | 4.11   | 85                           | 1075             |     |
| 1D315M-6       | 90        | 1185             | 40.22      | N/A             | 170.4           | 147.2           | 140.8           | 5.6             | 94.4          | 94.2   | 93.0  | 0.85            | 0.83   | 0.77  | 725.0     | 2.3         | 1.5     | 3.4     | 4.28   | 84                           | 1120             |     |
| 1D315L1-6      | 110       | 1187             | 44.89      | N/A             | 207.4           | 179.1           | 171.3           | 5.5             | 94.8          | 94.9   | 94.1  | 0.85            | 0.85   | 0.79  | 884.7     | 2.3         | 1.7     | 3.2     | 5.45   | 85                           | 1200             |     |
| 1D315L2-6      | 132       | 1190             | 54.47      | N/A             | 243.9           | 210.7           | 201.5           | 6.1             | 94.5          | 95.4   | 94.0  | 0.87            | 0.86   | 0.8   | 1059.0    | 2.4         | 1.4     | 3.0     | 6.12   | 85                           | 1290             |     |
| 1D355M1-6      | 160       | 1191             | 73.86      | N/A             | 290.8           | 251.1           | 240.2           | 6.3             | 95            | 95.0   | 93.0  | 0.88            | 0.87   | 0.82  | 1282.6    | 1.8         | 1.3     | 2.6     | 8.85   | 88                           | 1940             |     |
| 1D355M2-6      | 200       | 1190             | 72.44      | N/A             | 359.7           | 310.6           | 297.1           | 6.0             | 96            | 96.0   | 95.0  | 0.88            | 0.87   | 0.81  | 1604.6    | 2.0         | 1.5     | 2.5     | 9.55   | 89                           | 2040             |     |
| 1D355L-6       | 250       | 1191             | 84.55      | N/A             | 439.6           | 379.7           | 363.2           | 5.4             | 96            | 96.1   | 94.7  | 0.9             | 0.88   | 0.83  | 2004.1    | 1.8         | 1.4     | 2.5     | 10.63  | 88                           | 2220             |     |

•INL = No load Current •IFL = Full Load Current •IST = Locked Rotor Current •TST = Locked Rotor Torque •TPU = Pull Up Torque •TM = Maximum Torque  
•TFL = Full Load Torque

For use in countries excluding Australia and New Zealand

## 8 POLE - 900 RPM SYNCHRONOUS SPEED 60 Hz

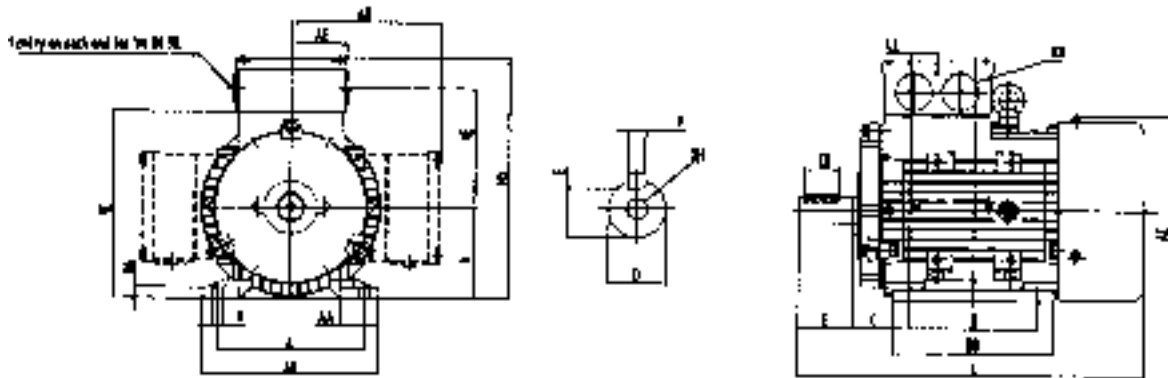
| MOTOR TYPE    | FULL           |             |                 |                 |                 |                 |                 |                 |         | EFFICIENCY @: |       |       |        |       | POWER FACTOR @: |             |         | FULL    |        |          | NOISE    |                  |     |
|---------------|----------------|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------|---------------|-------|-------|--------|-------|-----------------|-------------|---------|---------|--------|----------|----------|------------------|-----|
|               | OUTPUT LOAD kW | SPEED (RPM) | INL 400V (AMPS) | INL 380V (AMPS) | IFL 220V (AMPS) | IFL 380V (AMPS) | IFL 440V (AMPS) | IFL 460V (AMPS) | IST IFL | 100%FL        | 75%FL | 50%FL | 100%FL | 75%FL | 50%FL           | TORQUE (Nm) | TST TFL | TPU TFL | TM TFL | M of I J | LEVEL 1M | NETT WEIGHT (kg) | 1D  |
| 1D(1A)801-8   | 0.18           | 832         | 0.6             | 0.48            | 1.3             | 0.8             | 0.7             | 0.6             | 2.8     | 58.6          | 53.8  | 44.0  | 0.62   | 0.55  | 0.45            | 2.1         | 2.0     | 2.0     | 2.4    | 0.002    | 45       | 19               | 13  |
| 1D(1A)802-8   | 0.25           | 845         | 0.9             | 0.71            | 1.8             | 1.0             | 0.9             | 0.9             | 2.9     | 60.5          | 54.8  | 44.3  | 0.6    | 0.53  | 0.45            | 2.8         | 2.0     | 2.0     | 2.5    | 0.003    | 48       | 20               | 14  |
| 1D(1A)90S-8   | 0.37           | 854         | 1.1             | 0.87            | 2.5             | 1.4             | 1.2             | 1.2             | 3.1     | 64.9          | 64.7  | 55.8  | 0.61   | 0.52  | 0.42            | 4.1         | 1.9     | 1.9     | 2.6    | 0.004    | 53       | 30               | 18  |
| 1D(1A)90L-8   | 0.55           | 851         | 1.6             | 1.27            | 3.6             | 2.1             | 1.8             | 1.7             | 3.1     | 68            | 66.9  | 59.1  | 0.59   | 0.5   | 0.4             | 6.2         | 1.9     | 1.9     | 2.5    | 0.004    | 51       | 33               | 19  |
| 1D(1A)100L1-8 | 0.75           | 848         | 1.9             | 1.50            | 3.3             | 1.9             | 1.6             | 1.6             | 3.2     | 70.2          | 69.8  | 62.4  | 0.86   | 0.56  | 0.45            | 8.4         | 1.9     | 1.9     | 2.4    | 0.008    | 52       | 35               | 21  |
| 1D(1A)100L2-8 | 1.1            | 842         | 2.5             | 1.98            | 5.8             | 3.4             | 2.9             | 2.8             | 3.4     | 72.8          | 74.0  | 68.7  | 0.68   | 0.58  | 0.45            | 12.5        | 2.0     | 2.0     | 2.5    | 0.01     | 52       | 37               | 23  |
| 1D(1A)112M1-8 | 1.5            | 845         | 3.0             | 2.38            | 7.5             | 4.4             | 3.8             | 3.6             | 3.7     | 76.7          | 77.5  | 74.2  | 0.68   | 0.58  | 0.46            | 16.9        | 2.4     | 2.3     | 2.7    | 0.017    | 52       | 47               | 32  |
| 1D(1A)112M2-8 | 2.2            | 841         | 3.5             | 2.77            | 10.5            | 6.1             | 5.3             | 5.0             | 4.2     | 77.1          | 77.0  | 74.1  | 0.71   | 0.61  | 0.49            | 25.0        | 2.2     | 1.9     | 2.6    | 0.017    | 52       | 50               | 35  |
| 1D(1A)132S-8  | 2.2            | 859         | 3.8             | 3.01            | 10.1            | 5.8             | 5.0             | 4.8             | 4.3     | 79.6          | 79.8  | 77.4  | 0.72   | 0.63  | 0.5             | 24.5        | 2.2     | 2.0     | 2.7    | 0.031    | 58       | 65               | 50  |
| 1D(1A)132M1-8 | 3              | 855         | 4.4             | 3.48            | 13.0            | 7.5             | 6.5             | 6.2             | 4.2     | 80.7          | 83.0  | 80.3  | 0.75   | 0.67  | 0.54            | 33.5        | 2.3     | 2.2     | 2.7    | 0.04     | 63       | 72               | 57  |
| 1D(1A)132M2-8 | 4              | 856         | 5.7             | 4.51            | 17.0            | 9.8             | 8.5             | 8.1             | 4.2     | 81.3          | 82.0  | 80.1  | 0.76   | 0.68  | 0.56            | 44.6        | 2.2     | 2.0     | 2.6    | 0.04     | 64       | 77               | 62  |
| 1D(1A)160M1-8 | 4              | 864         | 5.9             | 4.67            | 17.6            | 10.2            | 8.8             | 8.4             | 4.2     | 81.5          | 81.8  | 80.8  | 0.73   | 0.66  | 0.55            | 44.2        | 1.8     | 1.7     | 2.4    | 0.075    | 67       | 109              | 87  |
| 1D(1A)160M2-8 | 5.5            | 869         | 7.8             | 6.18            | 23.1            | 13.4            | 11.5            | 11.0            | 4.5     | 85.7          | 87.0  | 85.8  | 0.73   | 0.66  | 0.53            | 60.5        | 2.2     | 2.0     | 3.0    | 0.093    | 67       | 121              | 98  |
| 1D(1A)160L-8  | 7.5            | 870         | 9.6             | 7.60            | 30.2            | 17.5            | 15.1            | 14.5            | 5.5     | 86.8          | 87.5  | 86.5  | 0.75   | 0.68  | 0.55            | 82.3        | 2.4     | 2.0     | 2.9    | 0.126    | 68       | 144              | 120 |
| 1D(1A)180L-8  | 11             | 868         | 12.5            | 9.90            | 43.9            | 25.4            | 21.9            | 21.0            | 5.2     | 86.6          | 87.4  | 86.0  | 0.76   | 0.71  | 0.57            | 121.0       | 2.4     | 1.9     | 2.9    | 0.203    | 83       | 172              | 140 |
| 1D(1A)200L-8  | 15             | 879         | 15.7            | 12.43           | 58.0            | 33.6            | 29.0            | 27.7            | 5.2     | 89.3          | 89.7  | 88.4  | 0.76   | 0.72  | 0.6             | 162.9       | 2.3     | 1.8     | 2.7    | 0.339    | 82       | 265              | 215 |
| 1D225S-8      | 18.5           | 881         | 20.2            | 15.99           | N/A             | 42.3            | 36.5            | 34.9            | 5.5     | 89.8          | 90.0  | 89.2  | 0.74   | 0.71  | 0.63            | 200.4       | 2.0     | 1.7     | 3.1    | 0.491    | 84       | 315              |     |
| 125M-8        | 22             | 879         | 20.7            | 16.39           | N/A             | 48.0            | 41.5            | 39.7            | 3.0     | 90.4          | 90.8  | 90.0  | 0.77   | 0.73  | 0.62            | 238.9       | 2.2     | 1.8     | 2.8    | 0.547    | 84       | 325              |     |
| 1D250M-8      | 30             | 884         | 28.4            | 22.48           | N/A             | 63.0            | 54.4            | 52.1            | 5.3     | 90.4          | 91.0  | 89.0  | 0.8    | 0.75  | 0.64            | 323.9       | 2.3     | 2.2     | 2.6    | 0.83     | 85       | 431              |     |
| 1D280S-8      | 37             | 887         | 30.0            | 23.75           | N/A             | 75.8            | 65.5            | 62.7            | 5.2     | 91.5          | 91.5  | 90.4  | 0.81   | 0.77  | 0.68            | 398.2       | 2.3     | 1.8     | 3.9    | 1.39     | 84       | 522              |     |
| 1D280M1-8     | 45             | 887         | 35.6            | 28.18           | N/A             | 90.7            | 78.4            | 74.9            | 4.9     | 91.9          | 92.0  | 90.0  | 0.82   | 0.76  | 0.65            | 484.3       | 2.2     | 2.0     | 3.1    | 1.65     | 84       | 577              |     |
| 1D280M2-8     | 55             | 888         | 43.4            | 34.36           | N/A             | 111.3           | 96.1            | 91.9            | 5.5     | 92.7          | 91.8  | 90.8  | 0.81   | 0.78  | 0.68            | 591.3       | 2.3     | 1.6     | 2.6    | 3.65     | 84       | 670              |     |
| 1D315S-8      | 55             | 888         | 41.3            | 32.70           | N/A             | 109.0           | 94.1            | 90.0            | 5.2     | 93.5          | 93.1  | 92.7  | 0.82   | 0.77  | 0.69            | 591.3       | 1.8     | 1.6     | 2.8    | 4.79     | 84       | 1040             |     |
| 1D315M-8      | 75             | 890         | 50.0            | 39.58           | N/A             | 146.5           | 126.5           | 121.0           | 5.6     | 93.7          | 94.0  | 91.8  | 0.83   | 0.79  | 0.71            | 804.5       | 2.2     | 1.3     | 2.8    | 5.58     | 85       | 1150             |     |
| 1D315L1-8     | 90             | 889         | 66.3            | 52.49           | N/A             | 178.0           | 153.7           | 147.0           | 5.9     | 93.7          | 93.8  | 92.0  | 0.82   | 0.76  | 0.68            | 966.5       | 2.5     | 1.7     | 2.7    | 6.37     | 85       | 1235             |     |
| 1D315L2-8     | 110            | 889         | 75.0            | 59.38           | N/A             | 216.6           | 187.1           | 178.9           | 5.7     | 94.1          | 94.1  | 92.7  | 0.82   | 0.79  | 0.71            | 1181.2      | 2.4     | 2.0     | 2.6    | 7.23     | 85       | 1325             |     |
| 1D355M1-8     | 132            | 893         | 86.8            | 68.72           | N/A             | 250.8           | 216.6           | 207.2           | 5.4     | 95.2          | 94.9  | 93.7  | 0.84   | 0.8   | 0.71            | 1411.3      | 1.7     | 1.0     | 2.3    | 10.55    | 84       | 1960             |     |
| 1D355M2-8     | 160            | 893         | 105.6           | 83.60           | N/A             | 307.7           | 265.7           | 254.1           | 4.9     | 95.2          | 95.1  | 94.1  | 0.83   | 0.81  | 0.73            | 1710.6      | 1.5     | 1.1     | 2.3    | 11.73    | 84       | 2020             |     |
| 1D355L-8      | 200            | 893         | 111.0           | 87.88           | N/A             | 369.2           | 318.9           | 305.0           | 4.8     | 95.7          | 95.7  | 94.9  | 0.86   | 0.86  | 0.77            | 2138.3      | 1.3     | 1.2     | 3.3    | 12.86    | 84       | 2190             |     |

•INL = No load Current •IFL = Full Load Current •IST = Locked Rotor Current •TST = Locked Rotor Torque •TPU = Pull Up Torque •TM = Maximum Torque  
 •TFL = Full Load Torque

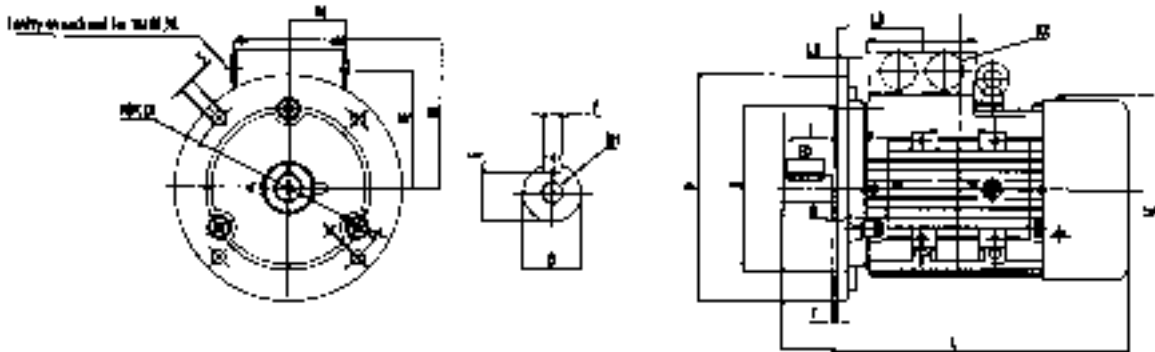
For use in countries excluding Australia and New Zealand



# 1AI DIMENSIONS B3 & B5



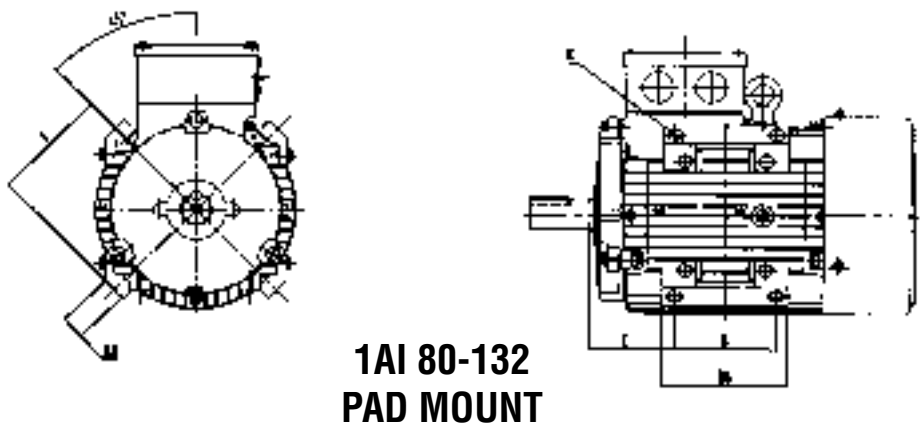
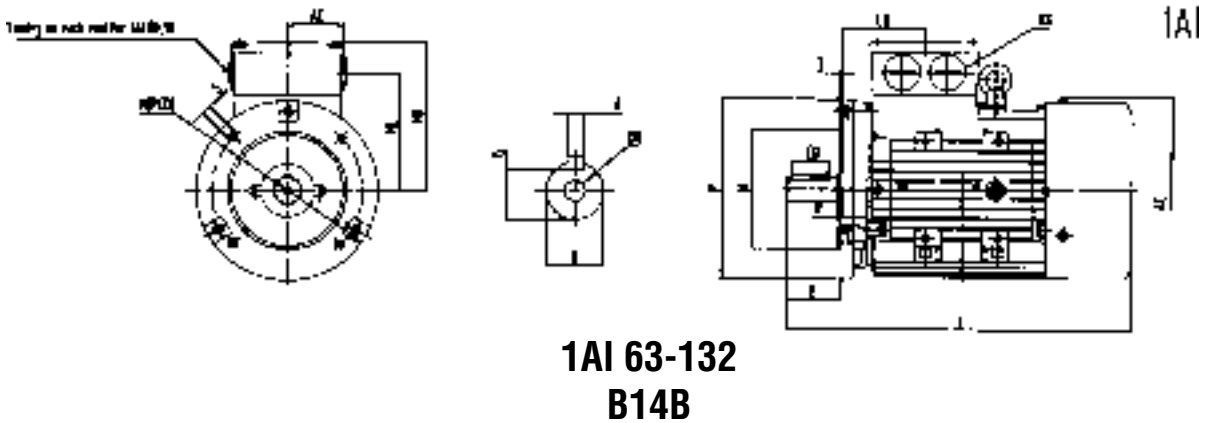
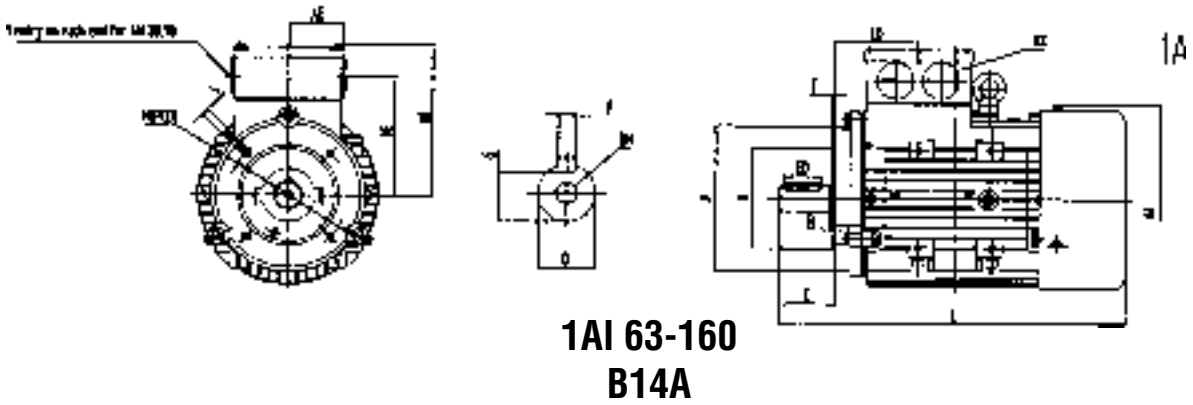
**1AI 63-200  
B3**



**1AI 63-200  
B5**

| Frame   | A   | AA   | AB  | AC  | AD  | ED | F  | G    | H   | HA | HC    | HE   | K      | KK              | L   | LA  | LD    | M   | N   | P   | R | S    | T   |
|---------|-----|------|-----|-----|-----|----|----|------|-----|----|-------|------|--------|-----------------|-----|-----|-------|-----|-----|-----|---|------|-----|
| 1AI63   | 100 | 23   | 130 | 145 | 110 | 12 | 4  | 8.5  | 63  | 6  | 136   | 54.5 | 10x7.3 | M25X1.5+M16X1.5 | 230 | 9.5 | 67    | 115 | 95  | 140 | 0 | 10   | 3.0 |
| 1AI71   | 112 | 26   | 140 | 150 | 102 | 20 | 5  | 11   | 71  | 8  | 153   | 63.5 | 10x7.3 | M25X1.5+M16X1.5 | 260 | 10  | 70    | 130 | 110 | 160 | 0 | 10   | 3.5 |
| 1AI80   | 125 | 35   | 160 | 175 | 133 | 25 | 6  | 15.5 | 80  | 10 | 162   | 97   | 13x10  | 2-M25x1.5       | 293 | 10  | 76    | 165 | 130 | 200 | 0 | 12   | 3.5 |
| 1AI90S  | 140 | 32.5 | 180 | 190 | 140 | 40 | 8  | 20   | 90  | 11 | 180   | 105  | 13x10  | 2-M25x1.5       | 348 | 12  | 77    | 165 | 130 | 200 | 0 | 12   | 3.5 |
| 1AI90L  | 140 | 32.5 | 180 | 190 | 140 | 40 | 8  | 20   | 90  | 11 | 180   | 105  | 13x10  | 2-M25x1.5       | 348 | 12  | 77    | 165 | 130 | 200 | 0 | 12   | 3.5 |
| 1AI100  | 160 | 40   | 200 | 210 | 170 | 45 | 8  | 24   | 100 | 12 | 200   | 125  | 15x12  | 2-M32x1.5       | 385 | 12  | 92    | 215 | 180 | 250 | 0 | 15   | 4   |
| 1AI112  | 190 | 42   | 230 | 236 | 180 | 45 | 8  | 24   | 112 | 13 | 227   | 140  | 15x12  | 2-M32x1.5       | 410 | 13  | 95    | 215 | 180 | 250 | 0 | 15   | 4   |
| 1AI132S | 216 | 50   | 260 | 275 | 195 | 63 | 10 | 33   | 132 | 15 | 264   | 157  | 15x12  | 2-M32x1.5       | 515 | 13  | 118   | 265 | 230 | 300 | 0 | 15   | 4   |
| 1AI132M | 216 | 50   | 260 | 275 | 195 | 63 | 10 | 33   | 132 | 15 | 264   | 157  | 15x12  | 2-M32x1.5       | 515 | 13  | 118   | 265 | 230 | 300 | 0 | 15   | 4   |
| 1AI160M | 254 | 54   | 308 | 335 | 250 | 90 | 12 | 37   | 160 | 20 | 323   | 199  | 18x15  | 2-M40x1.5       | 655 | 15  | 169   | 300 | 250 | 350 | 0 | 18.5 | 5   |
| 1AI160L | 254 | 54   | 308 | 335 | 250 | 90 | 12 | 37   | 160 | 20 | 323   | 199  | 18x15  | 2-M40x1.5       | 655 | 15  | 169   | 300 | 250 | 350 | 0 | 18.5 | 5   |
| 1AI180M | 279 | 61   | 340 | 380 | 275 | 90 | 14 | 42.5 | 180 | 25 | 366   | 222  | 18x15  | 2-M40x1.5       | 710 | 15  | 157.5 | 300 | 250 | 350 | 0 | 18.5 | 5   |
| 1AI180L | 279 | 61   | 340 | 380 | 275 | 90 | 14 | 42.5 | 180 | 25 | 366   | 222  | 18x15  | 2-M40x1.5       | 710 | 15  | 157.5 | 300 | 250 | 350 | 0 | 18.5 | 5   |
| 1AI200  | 318 | 75   | 380 | 415 | 300 | 90 | 16 | 49   | 200 | 28 | 414.5 | 250  | 25x19  | 2-M40x1.5       | 783 | 20  | 176   | 350 | 300 | 400 | 0 | 18.5 | 5   |

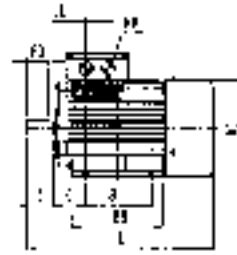
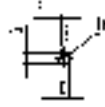
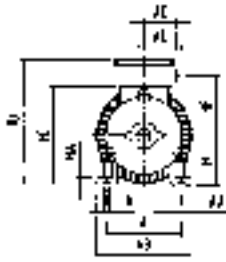
# 1AI DIMENSIONS B14A, B14B & PAD-MOUNT



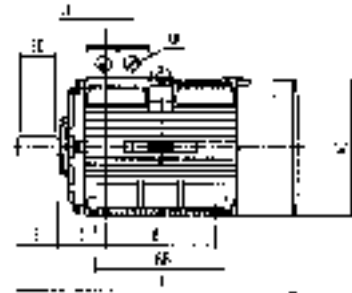
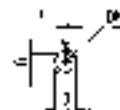
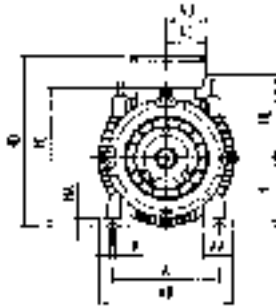
| Frame   | B14A |     |    |        |     |    |    |      |     |      |                 |     | B14B |   |     |     |     | PAD MOUNT |     |     |     |     |     |     |      |     |     |      |     |     |  |
|---------|------|-----|----|--------|-----|----|----|------|-----|------|-----------------|-----|------|---|-----|-----|-----|-----------|-----|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|--|
|         | AC   | AE  | D  | DH     | E   | ED | F  | G    | HB  | HE   | KK              | L   | LD   | R | M   | N   | P   | S         | T   | M   | N   | P   | S   | T   | AA   | B   | BB  | C    | J   | K   |  |
| 1AI 63  | 145  | 40  | 11 | M3X9   | 23  | 12 | 4  | 8.5  | 110 | 54.5 | M25x1.5+M16x1.5 | 230 | 67   | 0 | 75  | 60  | 90  | M5        | 2.5 | 100 | 80  | 118 | M6  | 2.5 |      |     |     |      |     |     |  |
| 1AI 71  | 150  | 45  | 14 | M4X10  | 30  | 20 | 5  | 11   | 102 | 63.5 | M25x1.5+M16x1.5 | 260 | 70   | 0 | 85  | 70  | 105 | M6        | 2.5 | 115 | 95  | 140 | M8  | 3   |      |     |     |      |     |     |  |
| 1AI 80  | 175  | 53  | 19 | M6X16  | 40  | 25 | 6  | 15.5 | 133 | 97   | 2-M25x1.5       | 293 | 76   | 0 | 100 | 80  | 120 | M6        | 3   | 130 | 110 | 160 | M8  | 3.5 | 28.7 | 90  | 114 | 55   | 90  | M12 |  |
| 1AI 90  | 190  | 53  | 24 | M8X19  | 50  | 40 | 8  | 20   | 140 | 105  | 2-M25x1.5       | 348 | 77   | 0 | 115 | 95  | 140 | M8        | 3   | 130 | 110 | 160 | M8  | 3.5 | 28.7 | 90  | 122 | 73.5 | 100 | M12 |  |
| 1AI 100 | 210  | 62  | 28 | M10X22 | 60  | 45 | 8  | 24   | 170 | 125  | 2-M32x1.5       | 385 | 92   | 0 | 130 | 110 | 160 | M8        | 3.5 | 165 | 130 | 200 | M10 | 3.5 | 24   | 100 | 124 | 83   | 112 | M12 |  |
| 1AI 112 | 236  | 62  | 28 | M10X22 | 60  | 45 | 8  | 24   | 180 | 140  | 2-M32x1.5       | 410 | 95   | 0 | 130 | 110 | 160 | M8        | 3.5 | 165 | 130 | 200 | M10 | 3.5 | 41.5 | 100 | 132 | 90   | 135 | M12 |  |
| 1AI 132 | 275  | 62  | 38 | M12X28 | 80  | 63 | 10 | 33   | 195 | 157  | 2-M32x1.5       | 515 | 118  | 0 | 165 | 130 | 200 | M10       | 3.5 |     |     |     |     |     | 34.9 | 140 | 176 | 108  | 150 | M16 |  |
| 1AI 160 | 335  | 106 | 42 | M16X36 | 110 | 90 | 12 | 37   | 250 | 199  | 2-M40X1.5       | 655 | 169  | 0 | 215 | 180 | 250 | M12       | 4   |     |     |     |     |     |      |     |     |      |     |     |  |

# 1D DIMENSIONS FOOT MOUNT B3

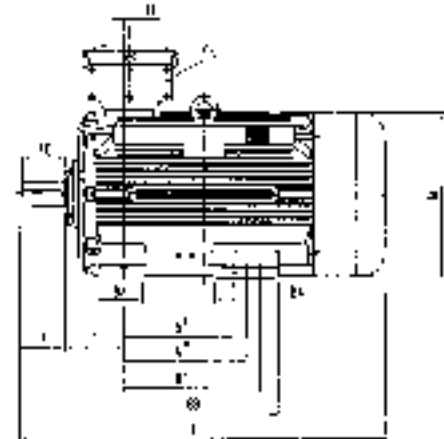
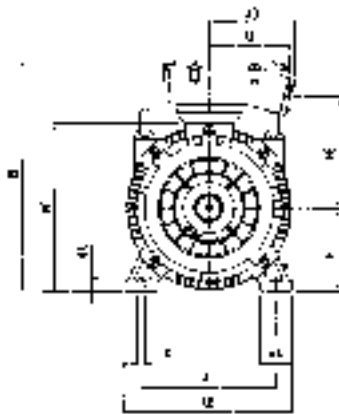
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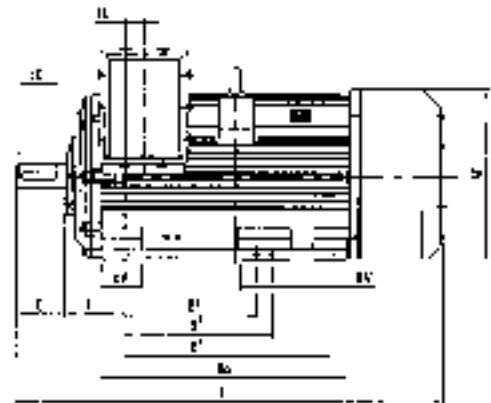
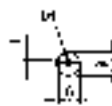
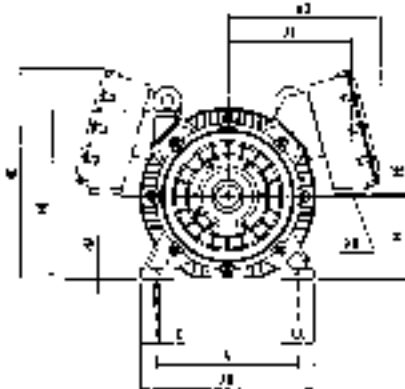
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1D315



1D355

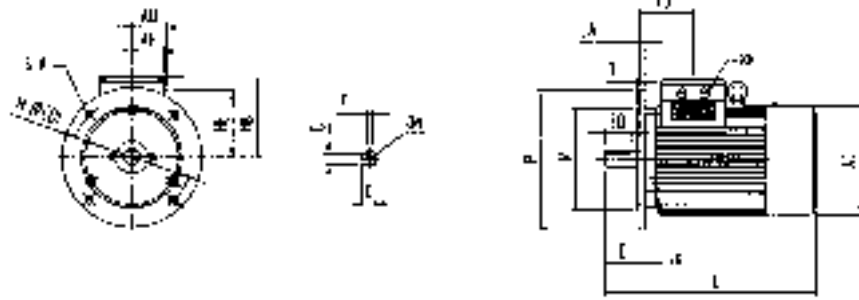


| Frame           | A   | AA  | AB  | AC  | AD  | AE  | B*  | B <sub>M</sub> | B <sub>L</sub> | BB   | C   | D   | DH     | E      | ED  | F  | G    | H   | HA   | HC  | HD  | HE  | K  | KK        | L    | LL |
|-----------------|-----|-----|-----|-----|-----|-----|-----|----------------|----------------|------|-----|-----|--------|--------|-----|----|------|-----|------|-----|-----|-----|----|-----------|------|----|
| 1D80            | 125 | 37  | 160 | 175 | 50  | 50  | 100 | N/A            | N/A            | 130  | 50  | 19  | M6X16  | 40     | 25  | 6  | 15.5 | 80  | 10   | 160 | 213 | 100 | 10 | 2-M25x1.5 | 293  | 26 |
| 1D90S           | 140 | 39  | 180 | 190 | 50  | 50  | 100 | N/A            | N/A            | 162  | 56  | 24  | M8X19  | 50     | 40  | 8  | 20   | 90  | 12.5 | 180 | 233 | 110 | 10 | 2-M25x1.5 | 345  | 25 |
| 1D90L           | 140 | 39  | 180 | 190 | 50  | 50  | 125 | N/A            | N/A            | 162  | 56  | 24  | M8X19  | 50     | 40  | 8  | 20   | 90  | 12.5 | 180 | 233 | 110 | 10 | 2-M25x1.5 | 345  | 25 |
| 1D100           | 160 | 45  | 205 | 210 | 64  | 64  | 140 | N/A            | N/A            | 188  | 63  | 28  | M10X22 | 63     | 45  | 8  | 24   | 100 | 14   | 200 | 258 | 125 | 12 | 2-M32x1.5 | 385  | 33 |
| 1D112           | 190 | 45  | 230 | 235 | 64  | 64  | 140 | N/A            | N/A            | 195  | 70  | 28  | M10X22 | 63     | 45  | 8  | 24   | 112 | 14   | 224 | 280 | 137 | 12 | 2-M32x1.5 | 405  | 33 |
| 1D132S          | 216 | 50  | 260 | 275 | 64  | 64  | 140 | N/A            | N/A            | 245  | 89  | 38  | M12X28 | 80     | 60  | 10 | 33   | 132 | 16   | 264 | 320 | 157 | 12 | 2-M32x1.5 | 515  | 19 |
| 1D132M          | 216 | 50  | 260 | 275 | 64  | 64  | 178 | N/A            | N/A            | 245  | 89  | 38  | M12X28 | 80     | 60  | 10 | 33   | 132 | 16   | 264 | 320 | 157 | 12 | 2-M32x1.5 | 515  | 19 |
| 1D160M          | 254 | 67  | 320 | 330 | 105 | 99  | 210 | N/A            | N/A            | 270  | 108 | 42  | M16X36 | 110    | 90  | 12 | 37   | 160 | 17   | 323 | 410 | 199 | 15 | 2-M40x1.5 | 630  | 36 |
| 1D160L          | 254 | 67  | 320 | 330 | 105 | 99  | 254 | N/A            | N/A            | 314  | 108 | 42  | M16X36 | 110    | 90  | 12 | 37   | 160 | 17   | 323 | 410 | 199 | 15 | 2-M40x1.5 | 675  | 36 |
| 1D180M          | 279 | 74  | 350 | 380 | 105 | 99  | 241 | N/A            | N/A            | 295  | 121 | 48  | M16X36 | 110    | 90  | 14 | 42.5 | 180 | 22   | 360 | 445 | 216 | 15 | 2-M40x1.5 | 700  | 29 |
| 1D180L          | 279 | 74  | 350 | 380 | 105 | 99  | 279 | N/A            | N/A            | 335  | 121 | 48  | M16X36 | 110    | 90  | 14 | 42.5 | 180 | 22   | 360 | 445 | 216 | 15 | 2-M40x1.5 | 740  | 29 |
| 1D200           | 318 | 85  | 388 | 415 | 166 | 148 | 305 | N/A            | N/A            | 377  | 133 | 55  | M20X42 | 110    | 90  | 16 | 49   | 200 | 25   | 407 | 520 | 245 | 19 | 2-M50x1.5 | 780  | 52 |
| 1D225S (4-8P)   | 356 | 85  | 441 | 460 | 166 | 148 | 286 | N/A            | N/A            | 433  | 149 | 60  | M20X42 | 140    | 110 | 18 | 53   | 225 | 28   | 455 | 570 | 268 | 19 | 2-M50x1.5 | 865  | 30 |
| 1D225M (2P)     | 356 | 85  | 441 | 460 | 166 | 148 | 311 | N/A            | N/A            | 433  | 149 | 55  | M20X42 | 110    | 90  | 16 | 49   | 225 | 28   | 455 | 570 | 268 | 19 | 2-M50x1.5 | 865  | 30 |
| 1D225M (4-8P)   | 356 | 85  | 441 | 460 | 166 | 148 | 311 | N/A            | N/A            | 433  | 149 | 60  | M20X42 | 140    | 110 | 18 | 53   | 225 | 28   | 455 | 570 | 268 | 19 | 2-M50x1.5 | 865  | 30 |
| 1D250M (2P)     | 406 | 100 | 486 | 512 | 190 | 166 | 349 | N/A            | N/A            | 500  | 168 | 60  | M20X42 | 140    | 110 | 18 | 53   | 250 | 33   | 505 | 625 | 306 | 24 | 2-M63x1.5 | 945  | 26 |
| 1D250M (4-8P)   | 406 | 100 | 486 | 512 | 190 | 166 | 349 | N/A            | N/A            | 500  | 168 | 65  | M20X42 | 140    | 110 | 18 | 58   | 250 | 33   | 505 | 625 | 306 | 24 | 2-M63x1.5 | 945  | 26 |
| 1D250M2 (4P)    | 406 | 100 | 486 | 512 | 190 | 166 | 349 | N/A            | N/A            | 500  | 168 | 70  | M20X42 | 140    | 110 | 20 | 62.5 | 250 | 33   | 505 | 625 | 306 | 24 | 2-M63x1.5 | 945  | 26 |
| 1D280S (2P)     | 457 | 115 | 550 | 570 | 190 | 166 | 368 | N/A            | N/A            | 480  | 190 | 65  | M20X42 | 140    | 110 | 18 | 58   | 280 | 35   | 560 | 690 | 332 | 24 | 2-M63x1.5 | 970  | 35 |
| 1D280S (4-8P)   | 457 | 115 | 550 | 570 | 190 | 166 | 368 | N/A            | N/A            | 480  | 190 | 75  | M20X42 | 140    | 110 | 20 | 67.5 | 280 | 35   | 560 | 690 | 332 | 24 | 2-M63x1.5 | 970  | 35 |
| 1D280M (2P)     | 457 | 115 | 550 | 570 | 190 | 166 | 419 | N/A            | N/A            | 530  | 190 | 65  | M20X42 | 140    | 110 | 18 | 58   | 280 | 35   | 560 | 690 | 332 | 24 | 2-M63x1.5 | 1020 | 35 |
| 1D280M1 (4-8P)  | 457 | 115 | 550 | 570 | 190 | 166 | 419 | N/A            | N/A            | 530  | 190 | 75  | M20X42 | 140    | 110 | 20 | 67.5 | 280 | 35   | 560 | 690 | 332 | 24 | 2-M63x1.5 | 1020 | 35 |
| 1D280M2 (4-8P)  | 457 | 115 | 550 | 570 | 190 | 166 | 419 | N/A            | N/A            | 529  | 190 | 80  | M20X42 | 170    | 140 | 22 | 71   | 280 | 35   | 560 | 690 | 332 | 24 | 2-M63x1.5 | 1050 | 35 |
| 1D315 (2P)      | 508 | 120 | 635 | 645 | 330 | 304 | 406 | 457            | 508            | 670  | 216 | 65  | M20X42 | 140    | 125 | 18 | 58   | 315 | 45   | 629 | 875 | 435 | 28 | up to 110 | 1345 | 20 |
| 1D315S/M (4P)   | 508 | 120 | 635 | 645 | 330 | 304 | 406 | 457            | 508            | 670  | 216 | 80  | M20X42 | 170    | 160 | 22 | 71   | 315 | 45   | 629 | 875 | 435 | 28 | up to 110 | 1375 | 20 |
| 1D315L (4P)     | 508 | 120 | 635 | 645 | 330 | 304 | 406 | 457            | 508            | 670  | 216 | 80  | M20X42 | 170    | 160 | 22 | 71   | 315 | 45   | 629 | 875 | 435 | 28 | up to 110 | 1375 | 20 |
|                 |     |     |     |     |     |     |     |                |                |      |     |     | 90     | M24X50 |     |    | 25   | 81  |      |     |     |     |    |           |      |    |
| 1D315 (6/8P)    | 508 | 120 | 635 | 645 | 330 | 304 | 406 | 457            | 508            | 670  | 216 | 80  | M20X42 | 170    | 160 | 22 | 71   | 315 | 45   | 629 | 875 | 435 | 28 | up to 110 | 1375 | 20 |
| 1D355M/L (2P)   | 610 | 140 | 750 | 770 | 670 | 565 | 560 | 630            | 875            | 1045 | 254 | 75  | M20X42 | 140    | 110 | 20 | 67.5 | 355 | 49   | 750 | 920 | 10  | 28 | up to 110 | 1790 | 78 |
| 1D355M/L (4-8P) | 610 | 140 | 750 | 770 | 670 | 565 | 560 | 630            | 875            | 1045 | 254 | 100 | M20X42 | 210    | 160 | 28 | 90   | 355 | 49   | 750 | 920 | 10  | 28 | up to 110 | 1860 | 78 |

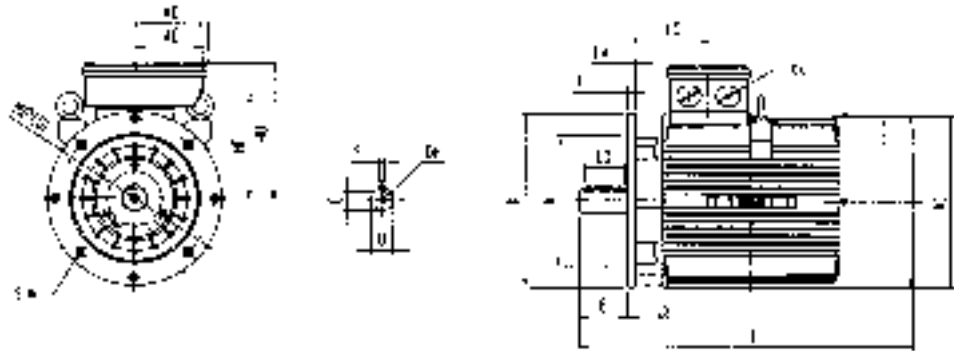
\* – is also B<sup>S</sup> for frame size 315/355

# 1D DIMENSIONS FLANGE MOUNT B5 & V1

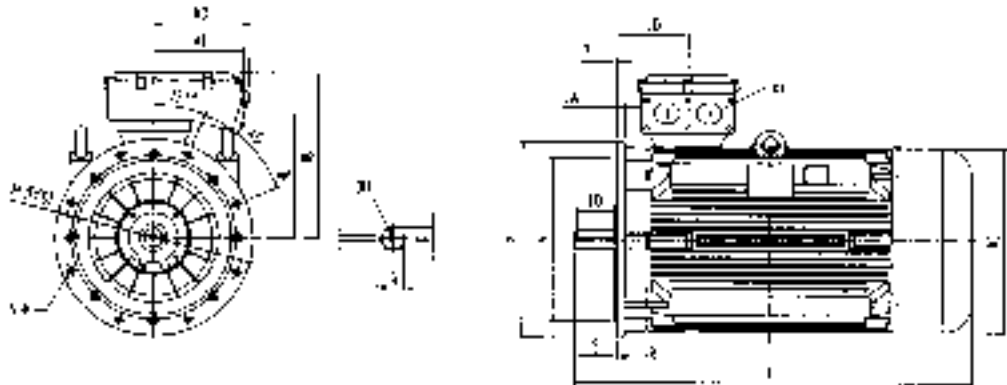
1D80-1D132



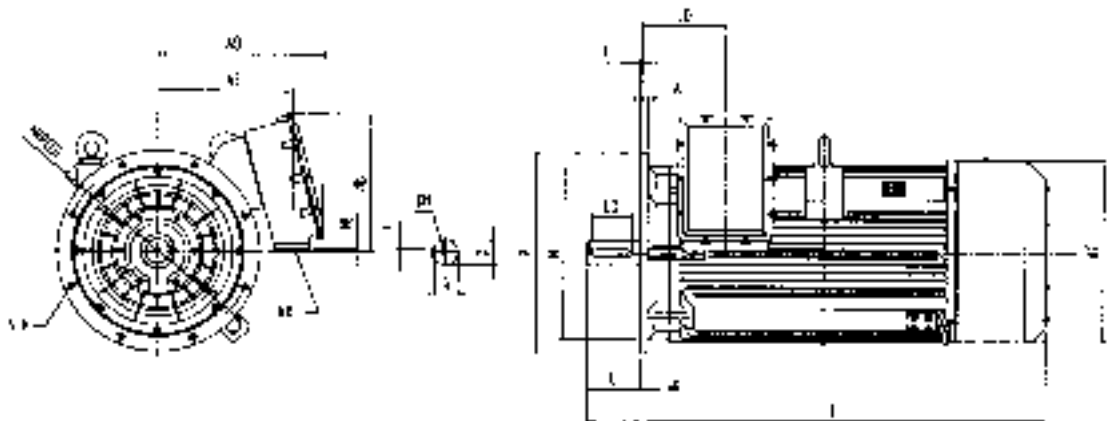
1D160-1D280



1D315



1D355



| Frame           | AC  | AD  | AE  | D   | DH     | E   | ED  | F  | G    | HB  | HE  | KK        | L    | LA | LD  | M   | N   | P   | R | S    | T   |
|-----------------|-----|-----|-----|-----|--------|-----|-----|----|------|-----|-----|-----------|------|----|-----|-----|-----|-----|---|------|-----|
| 1D80            | 175 | 50  | 50  | 19  | M6X16  | 40  | 25  | 6  | 15.5 | 133 | 100 | 2-M25x1.5 | 293  | 10 | 76  | 165 | 130 | 200 | 0 | 4X12 | 3.5 |
| 1D90            | 190 | 50  | 50  | 24  | M8X19  | 50  | 40  | 8  | 20   | 143 | 110 | 2-M25x1.5 | 345  | 12 | 81  | 165 | 130 | 200 | 0 | 4X12 | 3.5 |
| 1D100           | 210 | 64  | 64  | 28  | M10X22 | 60  | 45  | 8  | 24   | 160 | 125 | 2-M32x1.5 | 385  | 12 | 96  | 215 | 180 | 250 | 0 | 4X15 | 4   |
| 1D112           | 236 | 64  | 64  | 28  | M10X22 | 60  | 45  | 8  | 24   | 168 | 137 | 2-M32x1.5 | 405  | 12 | 102 | 215 | 180 | 250 | 0 | 4X15 | 4   |
| 1D132           | 275 | 64  | 64  | 38  | M12X28 | 80  | 63  | 10 | 33   | 188 | 157 | 2-M32x1.5 | 515  | 13 | 108 | 265 | 230 | 300 | 0 | 4X15 | 4   |
| 1D160M          | 330 | 105 | 99  | 42  | M16X36 | 110 | 90  | 12 | 37   | 265 | 199 | 2-M40x1.5 | 630  | 15 | 144 | 300 | 250 | 350 | 0 | 4X19 | 5   |
| 1D160L          | 330 | 105 | 99  | 42  | M16X36 | 110 | 90  | 12 | 37   | 265 | 199 | 2-M40x1.5 | 675  | 15 | 144 | 300 | 250 | 350 | 0 | 4X19 | 5   |
| 1D180M          | 380 | 105 | 99  | 48  | M16X36 | 110 | 90  | 14 | 42.5 | 270 | 216 | 2-M40x1.5 | 700  | 18 | 150 | 300 | 250 | 350 | 0 | 4X19 | 5   |
| 1D180L          | 380 | 105 | 99  | 48  | M16X36 | 110 | 90  | 14 | 42.5 | 270 | 216 | 2-M40x1.5 | 740  | 18 | 150 | 300 | 250 | 350 | 0 | 4X19 | 5   |
| 1D200           | 415 | 166 | 148 | 55  | M20X42 | 110 | 90  | 16 | 49   | 320 | 245 | 2-M50x1.5 | 780  | 20 | 185 | 350 | 300 | 400 | 0 | 4X19 | 5   |
| 1D225 (4-8P)    | 460 | 166 | 148 | 60  | M20X42 | 140 | 110 | 18 | 53   | 345 | 268 | 2-M50x1.5 | 865  | 20 | 179 | 400 | 350 | 450 | 0 | 8X19 | 5   |
| 1D225M (2P)     | 460 | 166 | 148 | 55  | M20X42 | 110 | 90  | 16 | 49   | 345 | 268 | 2-M50x1.5 | 865  | 20 | 179 | 400 | 350 | 450 | 0 | 8X19 | 5   |
| 1D250 (2P)      | 512 | 190 | 166 | 60  | M20X42 | 140 | 110 | 18 | 53   | 375 | 306 | 2-M63x1.5 | 945  | 22 | 194 | 500 | 450 | 550 | 0 | 8X19 | 5   |
| 1D250M (4-8P)   | 512 | 190 | 166 | 65  | M20X42 | 140 | 110 | 18 | 58   | 375 | 306 | 2-M63x1.5 | 945  | 22 | 194 | 500 | 450 | 550 | 0 | 8X19 | 5   |
| 1D250M2 (4P)    | 512 | 190 | 166 | 70  | M20X42 | 140 | 110 | 20 | 62.5 | 375 | 306 | 2-M63x1.5 | 945  | 22 | 194 | 500 | 450 | 550 | 0 | 8X19 | 5   |
| 1D280S (2P)     | 570 | 190 | 166 | 65  | M20X42 | 140 | 110 | 18 | 58   | 310 | 332 | 2-M63x1.5 | 970  | 23 | 225 | 500 | 450 | 550 | 0 | 8X19 | 5   |
| 1D280S (4-8P)   | 570 | 190 | 166 | 75  | M20X42 | 140 | 110 | 20 | 67.5 | 310 | 332 | 2-M63x1.5 | 970  | 23 | 225 | 500 | 450 | 550 | 0 | 8X19 | 5   |
| 1D280M (2P)     | 570 | 190 | 166 | 65  | M20X42 | 140 | 110 | 18 | 58   | 310 | 332 | 2-M63x1.5 | 1020 | 23 | 225 | 500 | 450 | 550 | 0 | 8X19 | 5   |
| 1D280M1 (4-8P)  | 570 | 190 | 166 | 75  | M20X42 | 140 | 110 | 20 | 67.5 | 310 | 332 | 2-M63x1.5 | 1020 | 23 | 225 | 500 | 450 | 550 | 0 | 8X19 | 5   |
| 1D280M2 (4-8P)  | 570 | 190 | 166 | 80  | M20X42 | 170 | 140 | 22 | 71   | 310 | 332 | 2-M63x1.5 | 1050 | 23 | 225 | 500 | 450 | 550 | 0 | 8X19 | 5   |
| 1D315 (2P)      | 645 | 330 | 304 | 65  | M20X42 | 140 | 125 | 18 | 58   | 560 | 435 | up to 110 | 1345 | 24 | 236 | 600 | 550 | 660 | 0 | 8X24 | 6   |
| 1D315 (4-8P)    | 645 | 330 | 304 | 80  | M20X42 | 170 | 160 | 22 | 71   | 560 | 435 | up to 110 | 1375 | 24 | 236 | 600 | 550 | 660 | 0 | 8X24 | 6   |
| 1D315L (4P)     | 645 | 330 | 304 | 90  | M24X50 | 170 | 160 | 25 | 81   | 560 | 435 | up to 110 | 1375 | 24 | 236 | 600 | 550 | 660 | 0 | 8X24 | 6   |
| 1D355M/L (2P)   | 770 | 670 | 565 | 75  | M20X42 | 140 | 110 | 20 | 67.5 | 565 | 10  | up to 110 | 1790 | 25 | 332 | 740 | 680 | 800 | 0 | 8X24 | 6   |
| 1D355M/L (4-8P) | 770 | 670 | 565 | 100 | M20X42 | 210 | 160 | 28 | 90   | 565 | 10  | up to 110 | 1860 | 25 | 332 | 740 | 680 | 800 | 0 | 8X24 | 6   |

# DIMENSIONS FACE-FLANGE MOUNT B14A & B14B



**1D80-160  
B14A**



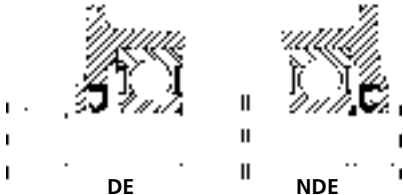
**1D80-112  
B14B**

| Frame  |     |     |    |    |        |     |    |    |      |     |     |           |     |     |   | B14A |     |     |     |     | B14B |     |     |     |     |
|--------|-----|-----|----|----|--------|-----|----|----|------|-----|-----|-----------|-----|-----|---|------|-----|-----|-----|-----|------|-----|-----|-----|-----|
|        | AC  | AD  | AE | D  | DH     | E   | ED | F  | G    | HB  | HE  | KK        | L   | LD  | R | M    | N   | P   | S   | T   | M    | N   | P   | S   | T   |
| 1D80   | 175 | 50  | 50 | 19 | M6X16  | 40  | 25 | 6  | 15.5 | 133 | 100 | 2-M25x1.5 | 293 | 76  | 0 | 100  | 80  | 120 | M6  | 3   | 130  | 110 | 160 | M8  | 3.0 |
| 1D90   | 190 | 50  | 50 | 24 | M8X19  | 50  | 40 | 8  | 20   | 143 | 110 | 2-M25x1.5 | 345 | 81  | 0 | 115  | 95  | 140 | M8  | 3   | 130  | 110 | 160 | M8  | 3.5 |
| 1D100  | 210 | 64  | 64 | 28 | M10X22 | 60  | 45 | 8  | 24   | 160 | 125 | 2-M32x1.5 | 385 | 96  | 0 | 130  | 110 | 160 | M8  | 3.5 | 165  | 130 | 200 | M10 | 3.5 |
| 1D112  | 236 | 64  | 64 | 28 | M10X22 | 60  | 45 | 8  | 24   | 168 | 137 | 2-M32x1.5 | 405 | 102 | 0 | 130  | 110 | 160 | M8  | 3.5 | 165  | 130 | 200 | M10 | 3.5 |
| 1D132  | 275 | 64  | 64 | 38 | M12X28 | 80  | 63 | 10 | 33   | 188 | 157 | 2-M32x1.5 | 515 | 108 | 0 | 165  | 130 | 200 | M10 | 3.5 |      |     |     |     |     |
| 1D160M | 330 | 105 | 99 | 42 | M16X36 | 110 | 90 | 12 | 37   | 265 | 199 | 2-M40x1.5 | 630 | 144 | 0 | 215  | 180 | 250 | M12 | 4   |      |     |     |     |     |
| 1D160L | 330 | 105 | 99 | 42 | M16X36 | 110 | 90 | 12 | 37   | 265 | 199 | 2-M40x1.5 | 675 | 144 | 0 | 215  | 180 | 250 | M12 | 4   |      |     |     |     |     |

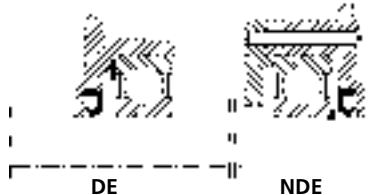
# BEARING SIZES AND REGREASING INFORMATION

## 1D 80-132 FRAME 1AI 63-132 FRAME

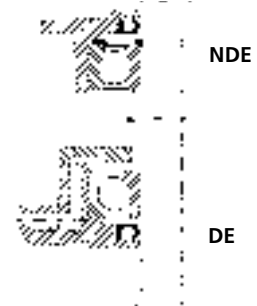
Standard Bearing arrangement with regreasing and grease relief. Suitable for B3 and V1



Non Drive End Located Suitable for B3 and V1

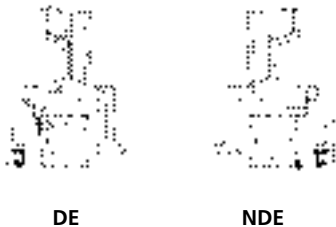


V1 motor with DE "7" series thrust bearing located, with regreasing and grease relief.



## 1D 160-280 FRAME 1AI 160-200 FRAME

Standard Bearing arrangement with regreasing and grease relief. Suitable for B3 and V1



Note:  
Other bearing arrangement are available and will be selected as the application requires.

V1 motor with DE "7" series thrust bearing located, with regreasing and grease relief.



## 1D 315-355 FRAME

Standard Bearing arrangement with regreasing and grease relief. Suitable for B3 and V1

V1 motor with NDE "7" series thrust bearing.





Standard: "SEALED FOR LIFE" DOUBLE SHIELDED ZZ BEARINGS.  
MOTOR CLEARANCE OR C3 NOT REGREASABLE.

| IEC FRAME SIZE | BEARING DRIVE END (D.E.) | BEARING NON DRIVE END (N.D.E.) | REGREASABLE PERIOD HOURS FOR OPERATING TEMPERATURE UP TO 70C |        |        | QUANTITY OF GREASE IN BEARING CHAMBER IF OPEN BEARINGS ARE FITTED |
|----------------|--------------------------|--------------------------------|--|--------|--------|---|
|                |                          |                                | n<3600   | n<1800 | n<1200 | GRAMS   |
| 1A163          | 6201ZZC3                 | 6201ZZC3                       | 30000  | 30000  | 30000  | 1.5   |
| 1A171          | 6202ZZC3                 | 6202ZZC3                       | 30000  | 30000  | 30000  | 2   |
| 1D80           | 6204ZZC3                 | 6204ZZC3                       | 30000  | 30000  | 30000  | 3.5   |
| 1D90           | 6205ZZC3                 | 6205ZZC3                       | 28000  | 30000  | 30000  | 4   |
| 1D100          | 6206ZZC3                 | 6206ZZC3                       | 25000  | 30000  | 30000  | 6   |
| 1D112          | 6306ZZC3                 | 6306ZZC3                       | 20000  | 20000  | 30000  | 7   |
| 1D132          | 6308ZZC3                 | 6308ZZC3                       | 15000  | 20000  | 30000  | 10.5  |

Standard: REGREASABLE OPEN BEARINGS  
C3 WITHOUT AUTOMATIC GREASE RELIEF

| IEC FRAME SIZE | BEARING DRIVE END (D.E.) | BEARING NON DRIVE END (N.D.E.) | REGREASABLE PERIOD HOURS FOR OPERATING TEMPERATURE UP TO 70C |          |          | QUANTITY OF GREASE IN BEARING CHAMBER IF OPEN BEARINGS ARE FITTED |
|----------------|--------------------------|--------------------------------|--|----------|----------|---|
|                |                          |                                | RPM<3600   | RPM<1800 | RPM<1200 | GRAMS   |
| 1D160          | 6309 C3                  | 6309 C3                        | 5700   | 9500     | 13000    | 13  |
| 1D180          | 6311 C3                  | 6311 C3                        | 4000   | 9000     | 13500    | 15  |
| 1D200          | 6312 C3                  | 6312 C3                        | 3500   | 8500     | 12000    | 20  |
| 1D200*         | NU312                    | 6312 C3                        | 17000  | 6000     | 10000    | 20  |
| 1D225          | 6313 C3                  | 6313 C3                        | 3000   | 8000     | 11000    | 22  |
| 1D225*         | NU313                    | 6313 C3                        | 1500   | 5500     | 9000     | 22  |
| 1D250          | 6314 C3                  | 6314 C3                        | 2000   | 7500     | 10500    | 23  |
| 1D250*         | NU314                    | 6314 C3                        | 1000   | 2500     | 8500     | 23  |
| 1D280          | 6316 C3                  | 6316 C3                        | 1500   | 7000     | 10000    | 30  |
| 1D280*         | NU316                    | 6316 C3                        | 750  | 4000     | 8000     | 30  |
| 1D315 2P       | 6217 C4                  | 6217 C3                        | 1000   | -        | -        | 30  |
| 1D315 4P       | NU319                    | 6319 C3                        | -  | 3800     | 7500     | 45  |
| 1D355 2P       | 6217 C4                  | 6217 C3                        | 1000   | -        | -        | 30  |
| 1D355 4P       | NU324                    | 6324 C3                        | -  | 2500     | 2000     | 60  |

\* Optional

NOTES:

- 1 Recommended greases - Frames 63-132 SKF LGMT 2  
- Frames 160-355 LS3 or Sheli Alvania R3

2 Vertical motors should be greased at half the time specified above for horizontal motors.

3 It is recommended that "Sealed for life" bearings are replaced with new bearings when they are due for regreasing. It is possible to remove the shield from the out board side of these bearings, clean them out, and repack them with fresh grease, but it is not recommended. (The grease is retained between the inboard bearing shield and the oilseal in the endshield, as all motors are IP55 and fitted with an oilseal at both ends.)

4 Regreasing time should be reduced if bearing operating temperature is in excess of 70C.

# BEARING LIFE - RADIAL SHAFT LOAD

## HORIZONTAL MOUNTING

Radial Load in N to give L10 Life

| FRAME SIZE | BEARINGS |        | SPEED SYNC. | L10 LIFE  |           |           |           |
|------------|----------|--------|-------------|-----------|-----------|-----------|-----------|
|            | D.E.     | N.D.E. |             | 15000 Hrs | 25000 Hrs | 40000 Hrs | 50000 Hrs |
| 1A163      | 6201ZZ   | 6201ZZ | 3000        | 350       | 290       | 240       | 230       |
|            |          |        | 1500        | 440       | 370       | 310       | 290       |
| 1A171      | 6202ZZ   | 6202ZZ | 3000        | 380       | 320       | 260       | 240       |
|            |          |        | 1500        | 480       | 400       | 330       | 310       |
| 1D80       | 6204ZZ   | 6204ZZ | 3000        | 600       | 500       | 420       | 380       |
|            |          |        | 1500        | 690       | 640       | 540       | 490       |
|            |          |        | 1000        | 860       | 720       | 610       | 560       |
|            |          |        | 750         | 960       | 800       | 670       | 620       |
| 1D90       | 6205ZZ   | 6205ZZ | 3000        | 660       | 540       | 450       | 410       |
|            |          |        | 1500        | 840       | 690       | 580       | 540       |
|            |          |        | 1000        | 960       | 790       | 660       | 610       |
|            |          |        | 750         | 1060      | 880       | 730       | 670       |
| 1D100      | 6206ZZ   | 6206ZZ | 3000        | 880       | 730       | 610       | 560       |
|            |          |        | 1500        | 1100      | 900       | 750       | 690       |
|            |          |        | 1000        | 1280      | 1070      | 900       | 830       |
|            |          |        | 750         | 1420      | 1180      | 1000      | 920       |
| 1D112      | 6206ZZ   | 6206ZZ | 3000        | 890       | 740       | 620       | 570       |
|            |          |        | 1500        | 1100      | 900       | 750       | 690       |
|            |          |        | 1000        | 1300      | 1070      | 900       | 830       |
|            |          |        | 750         | 1440      | 1190      | 1000      | 920       |
| 1D132      | 6208ZZ   | 6208ZZ | 3000        | 1420      | 1180      | 90        | 910       |
|            |          |        | 1500        | 1750      | 1440      | 1190      | 1090      |
|            |          |        | 1000        | 2000      | 1650      | 1370      | 1250      |
|            |          |        | 750         | 2290      | 1890      | 1590      | 1460      |
| 1D160      | 6309     | 6309   | 3000        | 2330      | 1920      | 1590      | 1460      |
|            |          |        | 1500        | 2960      | 2440      | 2030      | 1850      |
|            |          |        | 1000        | 3440      | 2840      | 2360      | 2180      |
|            |          |        | 750         | 3820      | 3160      | 2650      | 2430      |
| 1D180      | 6311     | 6311   | 3000        | 3310      | 2740      | 2280      | 2090      |
|            |          |        | 1500        | 4150      | 3430      | 2860      | 2620      |
|            |          |        | 1000        | 4820      | 3990      | 3340      | 3050      |
|            |          |        | 750         | 5360      | 4450      | 3730      | 3430      |
| 1D200      | 6312     | 6312   | 3000        | 3840      | 3180      | 2660      | 2440      |
|            |          |        | 1500        | 4930      | 4090      | 3440      | 3160      |
|            |          |        | 1000        | 5600      | 4640      | 3900      | 3590      |
|            |          |        | 750         | 6250      | 5200      | 4370      | 4030      |
| 1D200*     | NU312    | 6312   | 3000        | 9840      | 8390      | 7230      | 6740      |
|            |          |        | 1500        | 12180     | 10400     | 8980      | 8370      |
|            |          |        | 1000        | 13720     | 11700     | 10100     | 9410      |
|            |          |        | 750         | 15020     | 12840     | 11080     | 10340     |
| 1D225      | 6313     | 6313   | 3000        | 4290      | 3530      | 2940      | 2690      |
|            |          |        | 1500        | 5320      | 4360      | 3620      | 3300      |
|            |          |        | 1000        | 6240      | 5150      | 4290      | 3930      |
|            |          |        | 750         | 6910      | 5700      | 4770      | 4370      |
| 1D225*     | NU313    | 6313   | 3000        | 12030     | 10250     | 8820      | 8220      |
|            |          |        | 1500        | 14700     | 12500     | 10750     | 10010     |
|            |          |        | 1000        | 16750     | 14270     | 12290     | 11450     |
|            |          |        | 750         | 18300     | 15580     | 13430     | 12520     |
| 1D250      | 6315     | 6315   | 3000        | 5260      | 4330      | 3610      | 3300      |
|            |          |        | 1500        | 6620      | 5450      | 4540      | 4150      |
|            |          |        | 1000        | 7650      | 6310      | 5270      | 4830      |
|            |          |        | 750         | 8470      | 7000      | 5860      | 5370      |
| 1D250*     | NU315    | 6315   | 3000        | 15820     | 13480     | 11620     | 10820     |
|            |          |        | 1500        | 19440     | 16570     | 14280     | 13300     |
|            |          |        | 1000        | 22020     | 18770     | 16190     | 15080     |
|            |          |        | 750         | 24050     | 20500     | 17690     | 16480     |
| 1D280      | 6316     | 6316   | 3000        | 5570      | 4560      | 3770      | 3440      |
|            |          |        | 1500        | 6870      | 5580      | 4580      | 4150      |
|            |          |        | 1000        | 8180      | 6700      | 5550      | 5070      |
|            |          |        | 750         | 9020      | 7400      | 6130      | 5600      |
| 1D280*     | NU316    | 6316   | 3000        | 16850     | 14320     | 12330     | 11470     |
|            |          |        | 1500        | 20700     | 17600     | 15100     | 14030     |
|            |          |        | 1000        | 23720     | 20150     | 17350     | 16150     |
|            |          |        | 750         | 25850     | 22000     | 18220     | 17610     |
| 1D315-2P   | 6217     | 6217   | 3000        | 2610      | 1890      | 1330      | 1090      |
| 1D315-468P | NU319    | 6319   | 1500        | 26880     | 22640     | 19300     | 17860     |
|            |          |        | 1000        | 30540     | 25760     | 21970     | 20350     |
|            |          |        | 750         | 33250     | 28060     | 23930     | 22160     |
| 1D355-2P   | 6217     | 6217   | 3000        | 1700      | 930       | 330       | 80        |
| 1D355-468P | 324      | 6324   | 1500        | 44000     | 37070     | 31580     | 29230     |
|            |          |        | 1000        | 49250     | 41420     | 35220     | 32580     |
|            |          |        | 750         | 53900     | 45460     | 38620     | 35740     |

\*Assumes 90% bearing reliability factor and clean environment

\*Load is considered to be applied 10mm from the end of the shaft drive end

# BEARING LIFE - AXIAL SHAFT LOAD

## VERTICAL MOUNTING

| FRAME SIZE | BEARING |        | SPEED SYNC. | MAX kg for L10 life of 25000 Hrs |
|------------|---------|--------|-------------|----------------------------------|
|            | D.E     | N.D.E  |             |                                  |
| 1A163      | *6201ZZ | 6201ZZ | 3000        | 25                               |
|            |         |        | 1500        | 36                               |
| 1A171      | *6202ZZ | 6202ZZ | 3000        | 28                               |
|            |         |        | 1500        | 36                               |
| 1D80       | *6204ZZ | 6204ZZ | 3000        | 46                               |
|            |         |        | 1500        | 65                               |
|            |         |        | 1000        | 74                               |
|            |         |        | 750         | 82                               |
| 1D90       | *6205ZZ | 6205ZZ | 3000        | 48                               |
|            |         |        | 1500        | 61                               |
|            |         |        | 1000        | 69                               |
|            |         |        | 750         | 8                                |
| 1D100      | *6206ZZ | 6206ZZ | 3000        | 67                               |
|            |         |        | 1500        | 83                               |
|            |         |        | 1000        | 99                               |
|            |         |        | 750         | 124                              |
| 1D112      | *6206ZZ | 6206ZZ | 3000        | 66                               |
|            |         |        | 1500        | 81                               |
|            |         |        | 1000        | 109                              |
|            |         |        | 750         | 121                              |
| 1D132      | *6208ZZ | 6208ZZ | 3000        | 103                              |
|            |         |        | 1500        | 124                              |
|            |         |        | 1000        | 140                              |
|            |         |        | 750         | 165                              |
| 1D160      | 6309    | *6309  | 3000        | 165                              |
|            |         |        | 1500        | 210                              |
|            |         |        | 1000        | 245                              |
|            |         |        | 750         | 275                              |
| 1D180      | 6311    | *6311  | 3000        | 228                              |
|            |         |        | 1500        | 285                              |
|            |         |        | 1000        | 334                              |
|            |         |        | 750         | 375                              |
| 1D200      | 6312    | *6312  | 3000        | 262                              |
|            |         |        | 1500        | 342                              |
|            |         |        | 1000        | 387                              |
|            |         |        | 750         | 438                              |
| 1D225      | 6313    | *6313  | 3000        | 280                              |
|            |         |        | 1500        | 348                              |
|            |         |        | 1000        | 408                              |
|            |         |        | 750         | 455                              |
| 1D250      | 6315    | *6315  | 3000        | 345                              |
|            |         |        | 1500        | 433                              |
|            |         |        | 1000        | 502                              |
|            |         |        | 750         | 562                              |
| 1D280      | 6316    | *6316  | 3000        | 300                              |
|            |         |        | 1500        | 392                              |
|            |         |        | 1000        | 495                              |
|            |         |        | 750         | 552                              |
| 1D315-2P   | 6217    | **7217 | 3000        | 622                              |
| 1D315-468P | NU319   | **7319 | 1500        | 1745                             |
|            |         |        | 1000        | 2030                             |
|            |         |        | 750         | 2235                             |
| 1D355-2P   | 6217    | **7217 | 3000        | 430                              |
| 1D355-468P | NU324   | **7324 | 1500        | 2165                             |
|            |         |        | 1000        | 2400                             |
|            |         |        | 750         | 2680                             |

Assumes 90% bearing reliability factor and clean environment

\*Thrust carrying bearing for standard bearing arrangement

\*\*7 series bearing recommended for high vertical loads

# ARRANGEMENT & PARTS LIST

**1AI63 - 132 FRAME**

**1D80 - 132 FRAME**

## Parts Description

1. Endshield D.E. with oil seal
2. Wave Washer
3. Bearing D.E.
4. Terminal Box
5. Terminal Box Lid
6. Stator Lamination Pack
7. Rotor Lamination Pack
8. Stator Frame
9. External Earth Stud
10. Endshield N.D.E. with oil seal
11. Bearing N.D.E.
12. Fan Cowl
13. Fan

## Specification

### Standard Construction

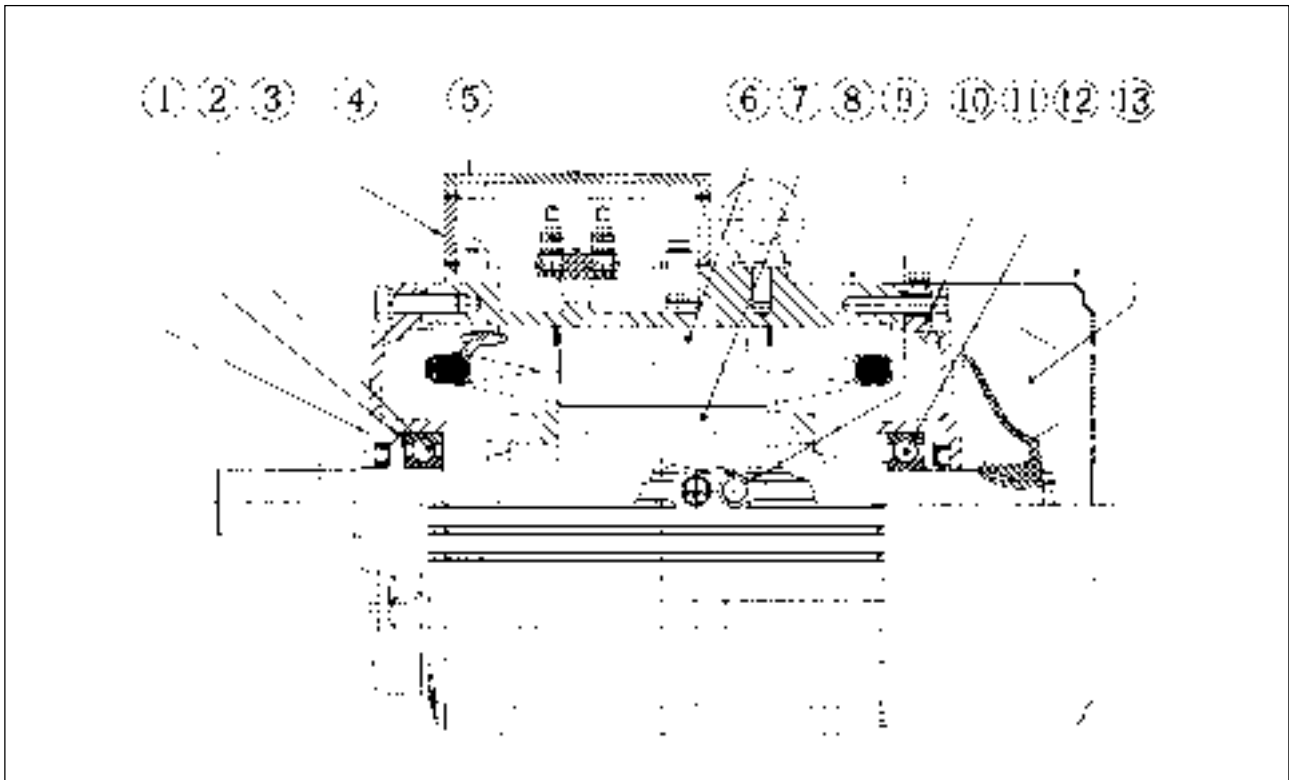
- Cast Iron Frame 1D, Aluminium Frame 1AI
- Cast Iron Terminal Box 1D, Aluminium Terminal Box 1AI\*
- Pressed Steel Fan Cowl
- Cast Iron Endshields with oil seals
- Polypropylene, glass reinforced Fan.
- SKF or equivalent Bearings.

### Features

- Dimensions and ratings to IEC 72, AS 1359, BS 4999.
- IP55
- Top mounted Terminal Box
- Terminal Box rotates in 90 deg. Increments (80-132).
- Drilled and tapped hole in D.E. of shaft.
- Cooled IC411.

### Mounting

- B3-Foot mounted.
- B5-Flange mounted-horizontal.
- B3-B5-Foot and Flange mounted.
- V1-Flange mounted-vertical.



\*1AI63, 71 have terminal box integral with frame

**1AI160-200 FRAME**  
**1D 160-280 FRAME**

**Parts Description**

1. Outer Bearing Cap D.E. with oil seal
2. Wave Washer
3. Bearing D.E.
4. Inner Bearing Cap D.E.
5. Endshield D.E.
6. Terminal Box Lid
7. Terminal Box
8. External Earth Stud
9. Rotor Lamination Pack
10. Stator Lamination Pack
11. Nameplate
12. Stator Frame
13. Inner Bearing Cap N.D.E.
14. Endshield N.D.E.
15. Fan
16. Fan Cowl
17. Bearing N.D.E.
18. Outer Bearing Cap N.D.E with oil seal

**Specification**

Standard Construction

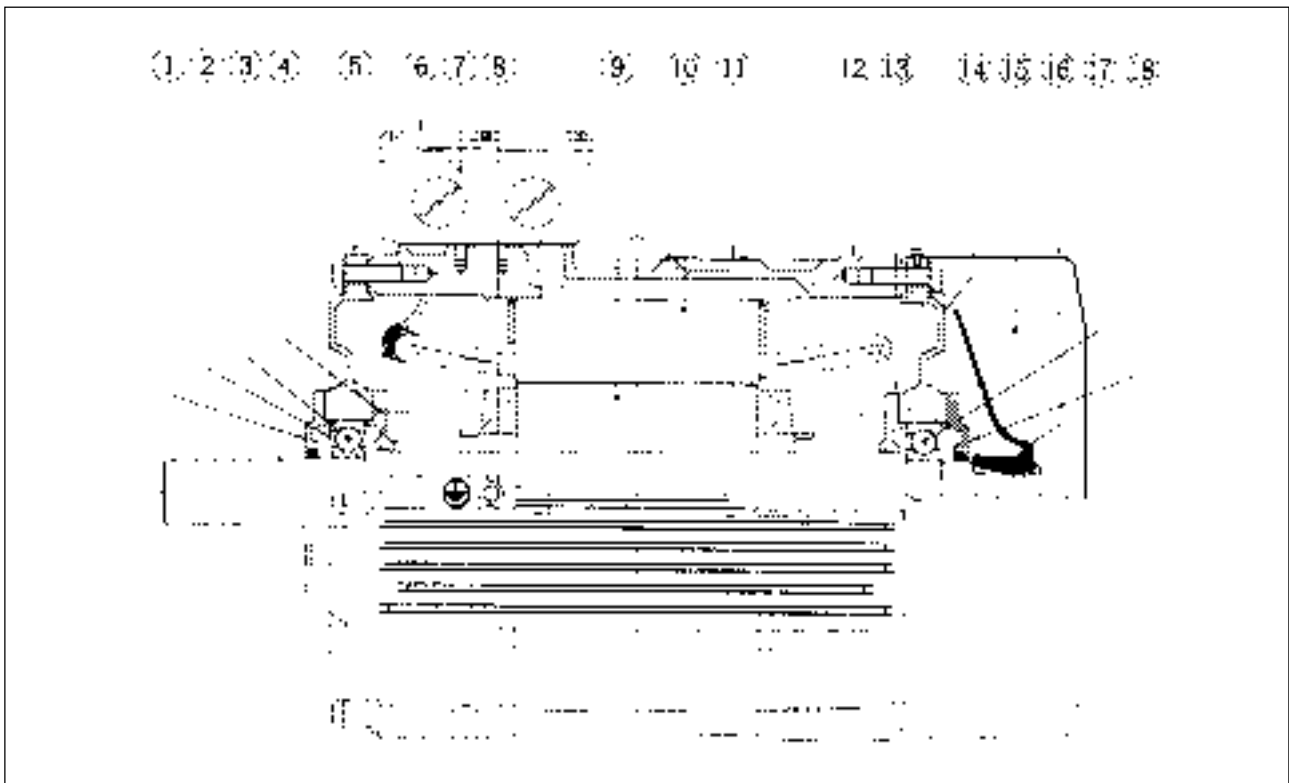
- Cast Iron Frame 1D, Aluminium frame 1AI
- Cast Iron terminal box 1D, Aluminium terminal box 1AI
- Cast Iron Endshields.
- Cast Iron Bearings caps with oil seal.
- Pressed Steel Fan Cowl.
- Polypropylene , glass reinforced Fan.
- SKF or equivalent Bearings.

Features

- Dimensions and ratings to IEC 72, AS 1359, BS 4999.
- IP55.
- Top mounted Terminal Box.
- Terminal Box rotates 90 deg. increments.
- Drilled and tapped hole in D.E. of shaft.
- Cooling IC411.

Mounting

- B3-Foot mounted.
- B5-Flange mounted-horizontal.
- B3/B5-Foot and Flange mounted.
- V1-Flange mounted-vertical.



## 1D315 - 355 FRAME

### Parts Description

1. Flinger D.E.
2. Outer bearing cap D.E. with oil seal
3. Bearing D.E.
4. Inner bearing cap D.E.
5. Endshield D.E.
6. Terminal Box
7. Terminal Box lid
8. Terminal Box adapter
9. Removable gland plate
10. External earth stud
11. Stator Lamination pack
12. Rotor Lamination pack
13. Stator frame
14. Inner bearing cap N.D.E.
15. Endshield N.D.E.
16. Fan
17. Fan Cowl
18. Bearing N.D.E.
19. Outer bearing cap N.D.E. with oil seal
20. Flinger N.D.E.

### Specification

#### Standard Construction

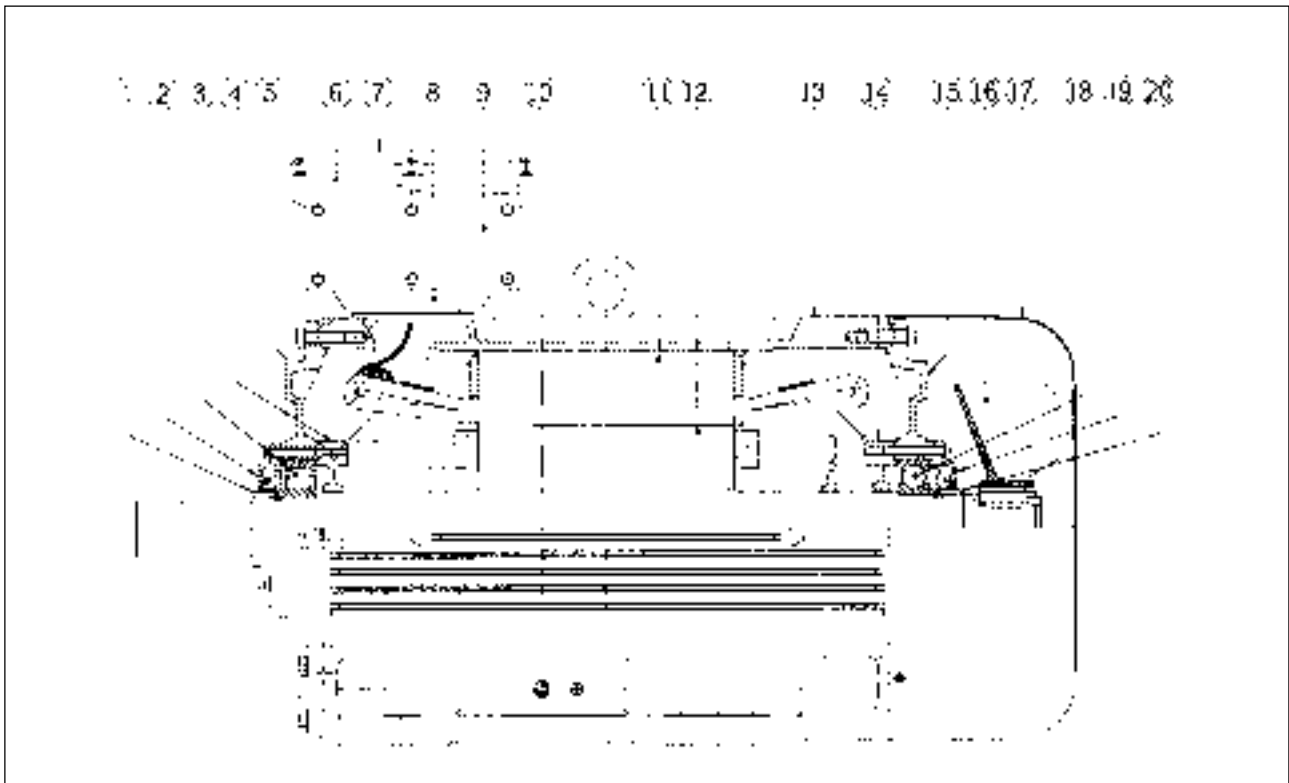
- Cast Iron Frame, Endshields.
- Cast Iron Terminal Box.
- Pressed Steel Fan Cowl.
- Cast Iron outer bearing caps with oils seals.
- Aluminium Fan.
- SKF or equivalent Bearings.

#### Features

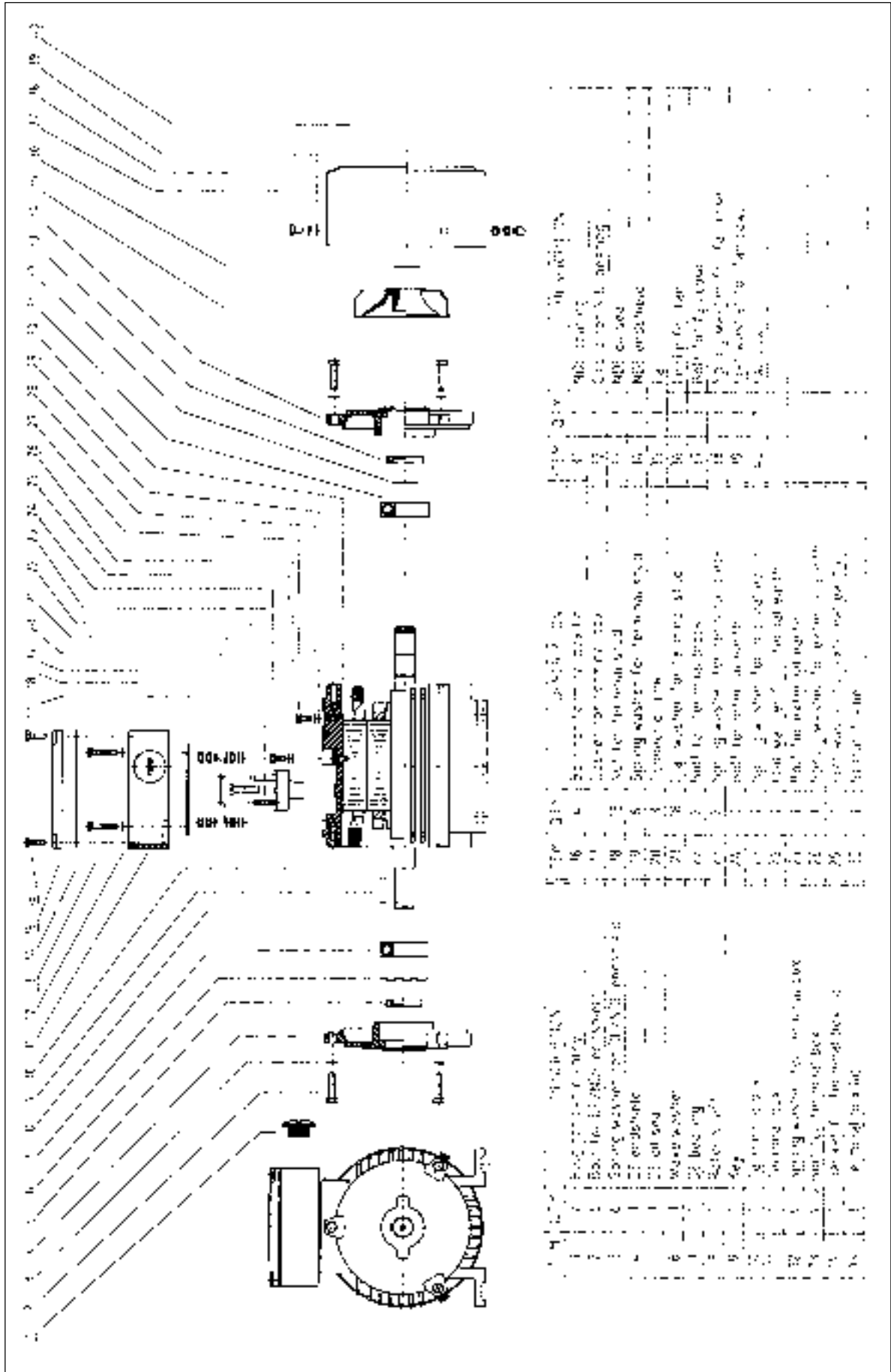
- Dimensions and ratings to IEC 72, AS 1359, BS 4999.
- IP55.
- Top mounted Terminal Box (1D315).
- Terminal Box 45 deg. from top (1D355).
- Terminal Box rotates in 90 deg. increments.
- Drilled and tapped hole in D.E. of shaft.
- Cooling IC411

#### Mounting

- B3-Foot mounted.
- B3/B5-Foot and Flange mounted.
- V1-Flange mounted-vertical.

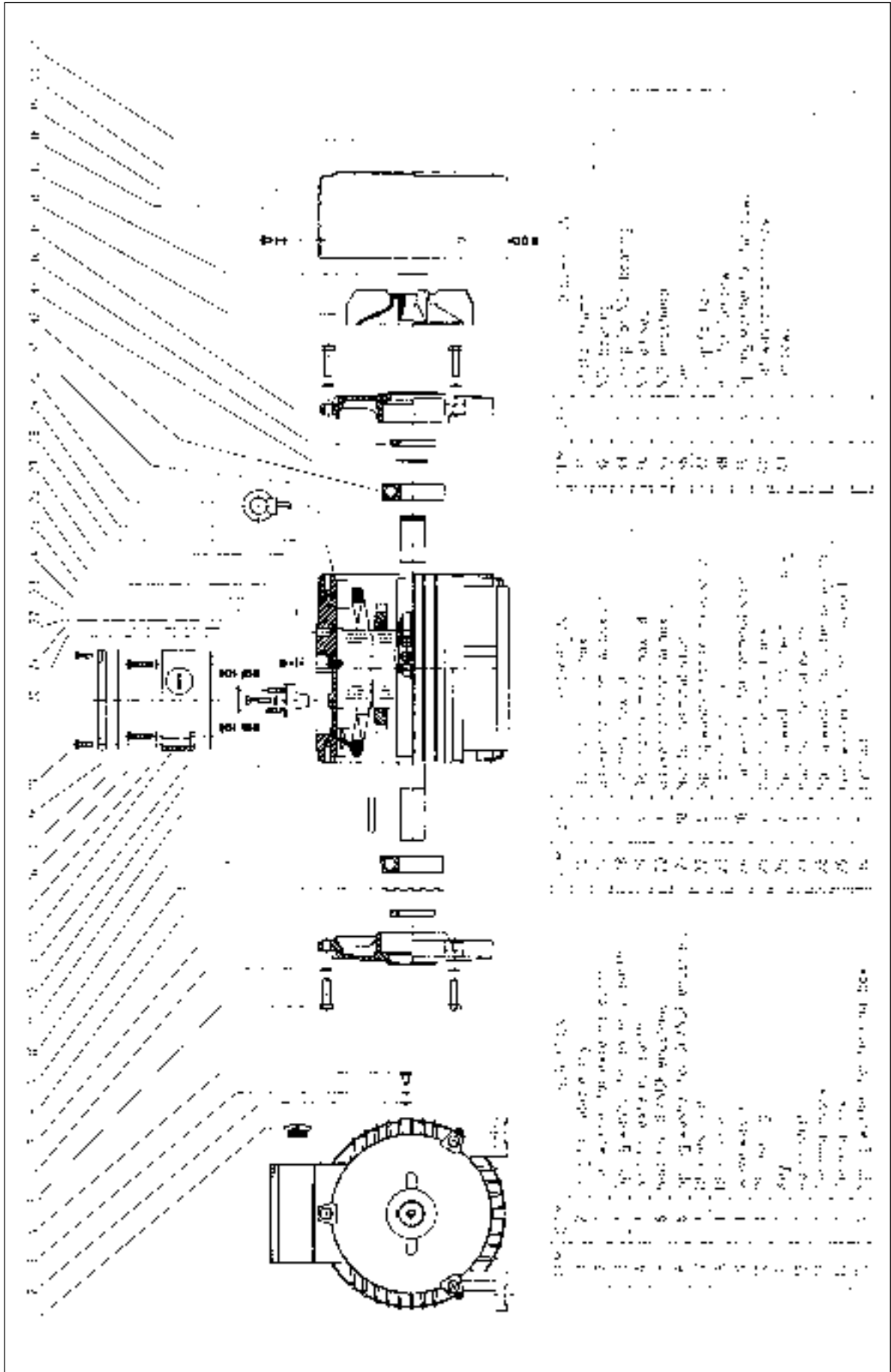


# EXPLODED VIEW 1D80 - 1D90 FRAME & 1A163 - 1A190 FRAME

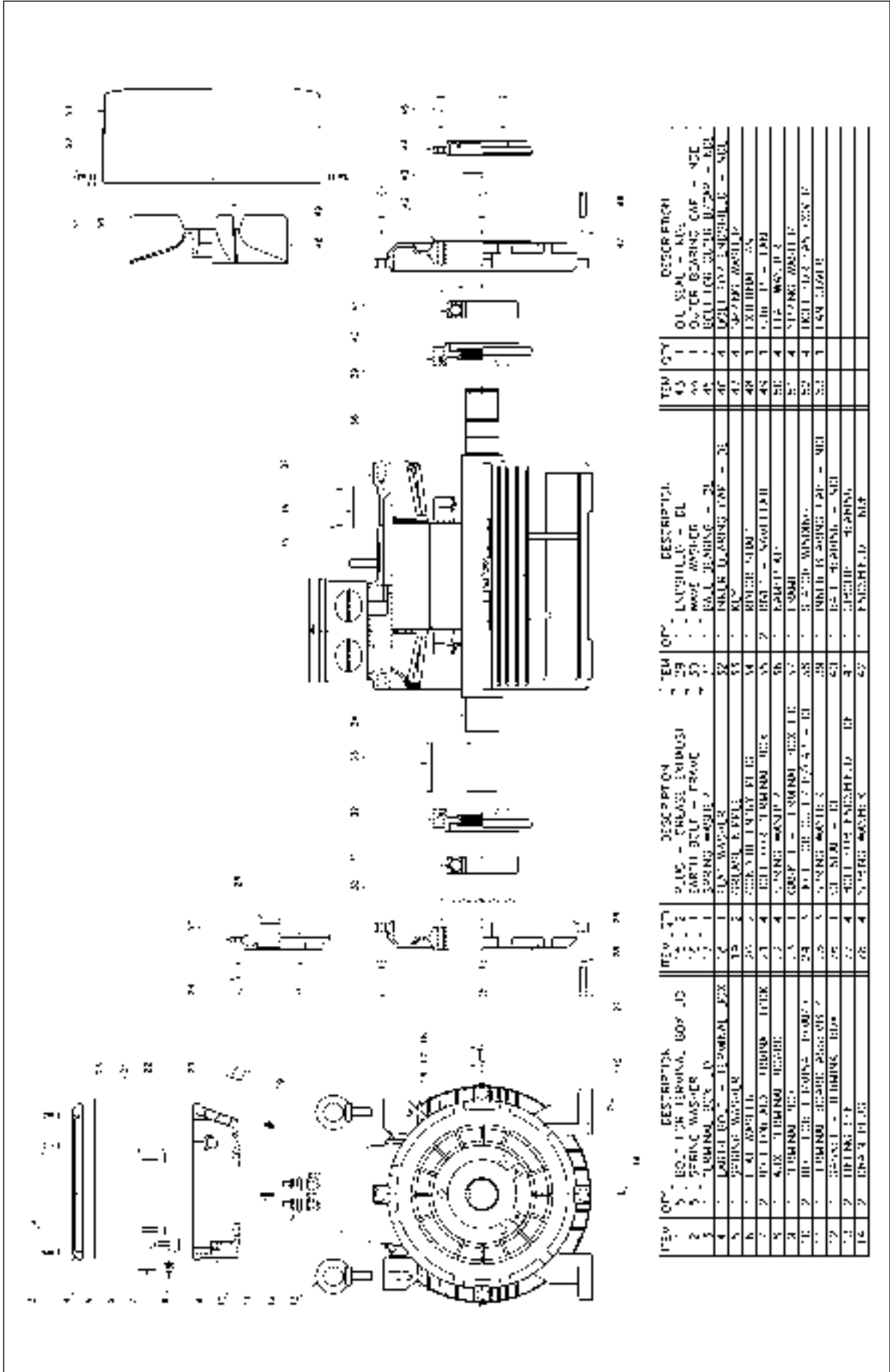




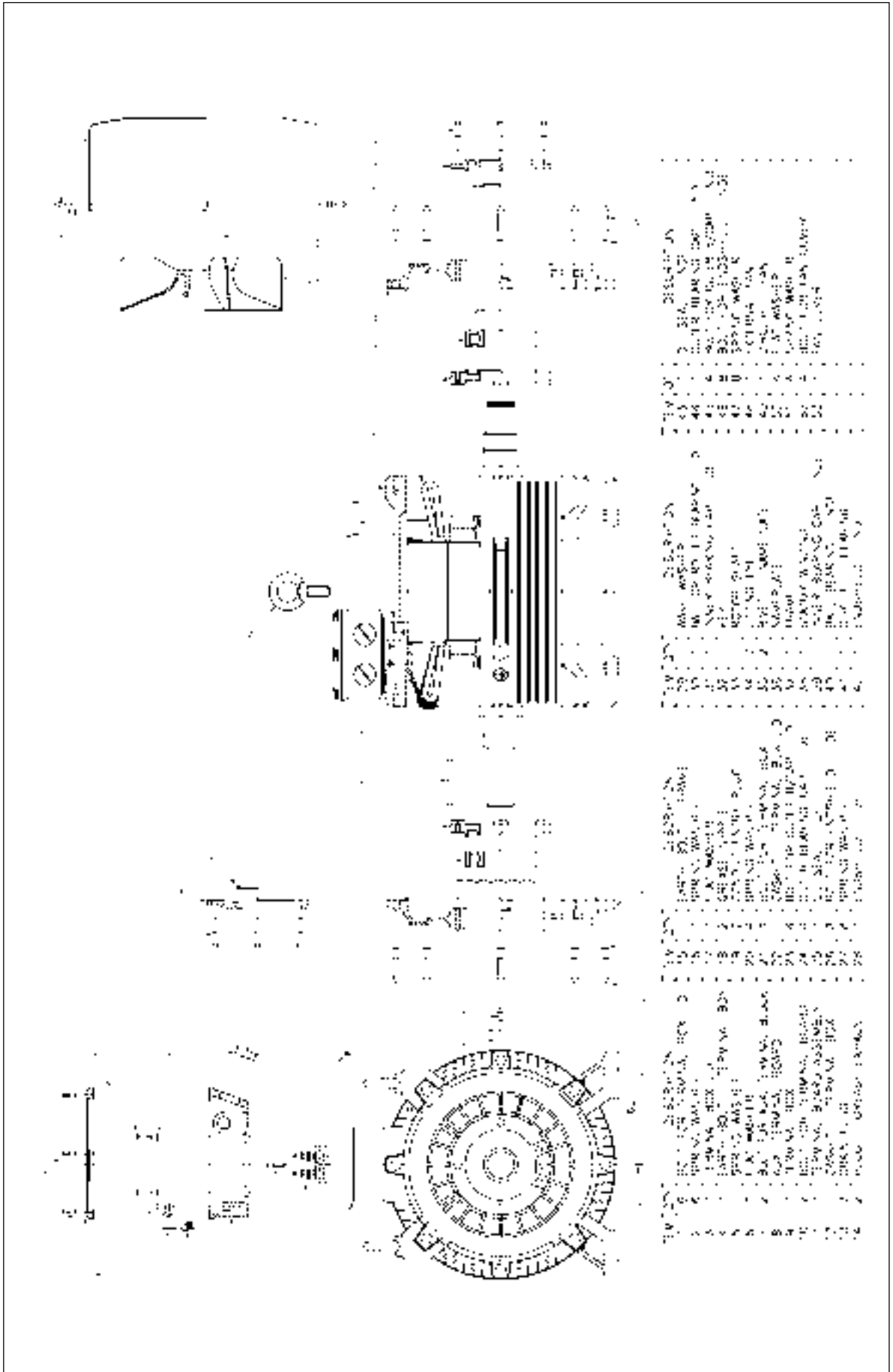
# EXPLODED VIEW 1D100 - 1D132 FRAME & 1A100 - 1A132 FRAME



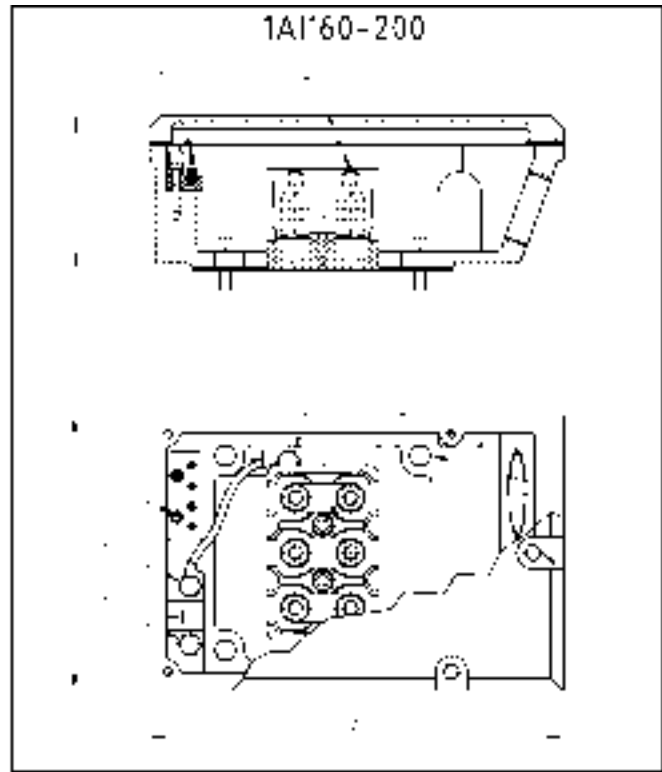
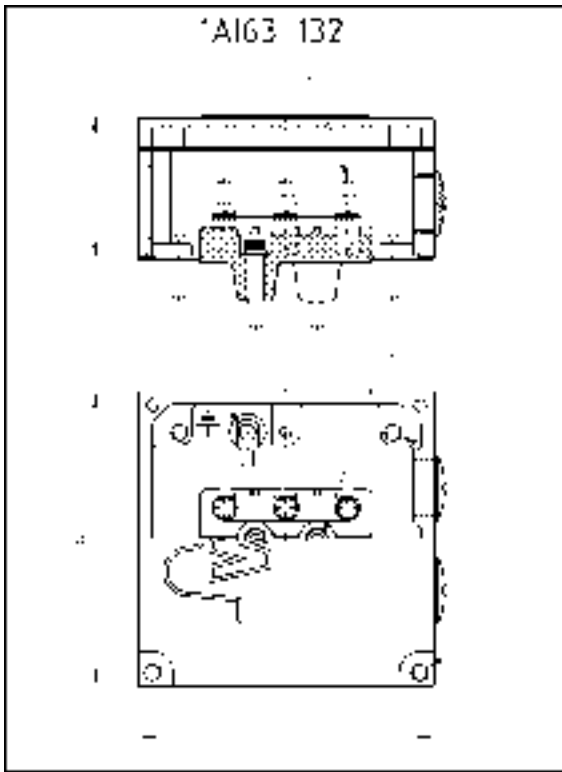
# EXPLODED VIEW 1D160 - 1D225 FRAME & 1A160 - 1A1200 FRAME



# EXPLODED VIEW 1D250 - 1D355 FRAME

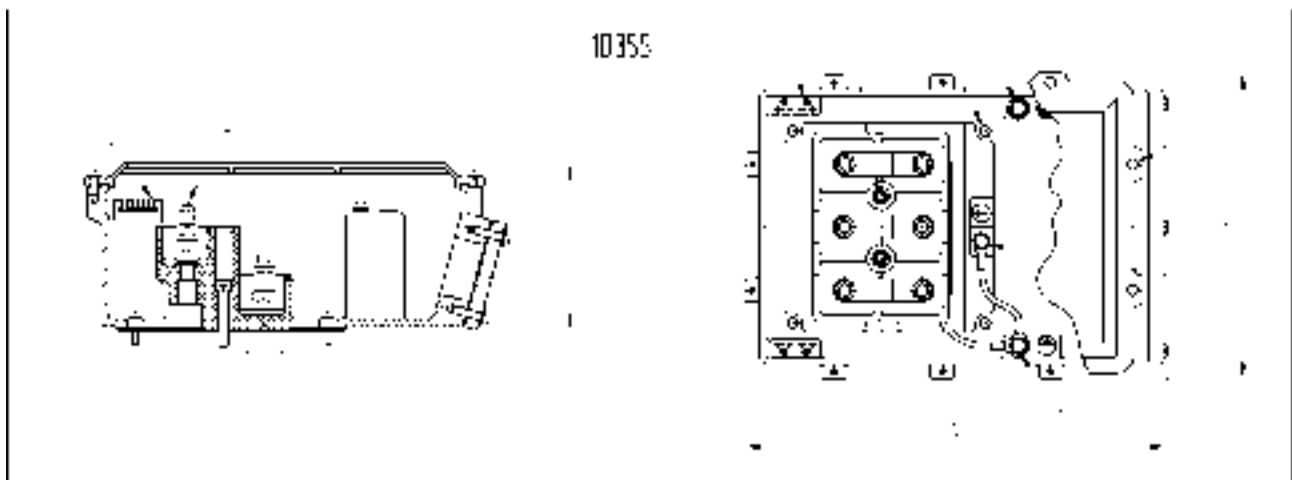
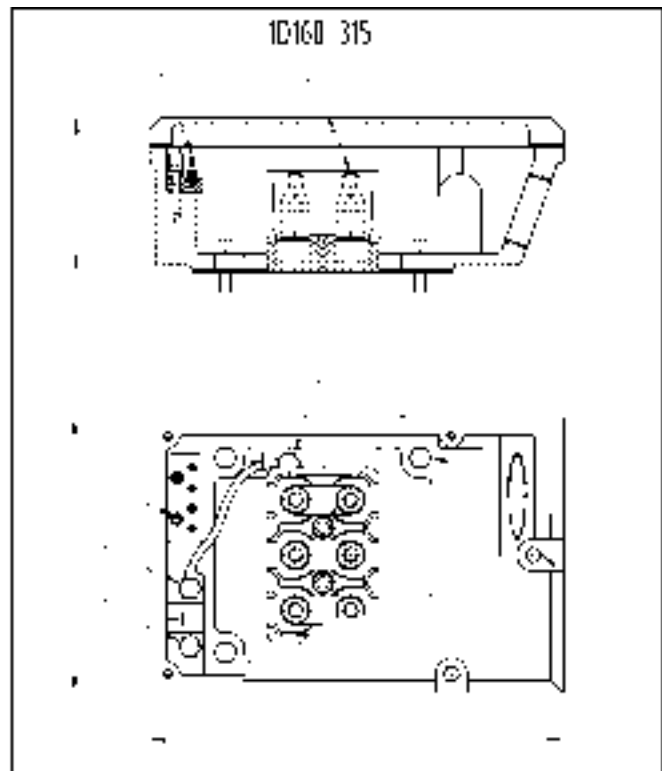
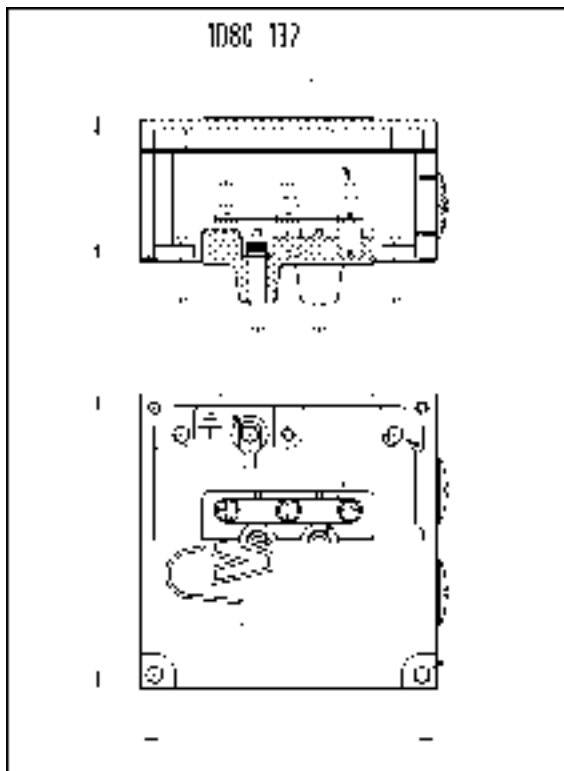


# 1AI TERMINAL BOX DATA



| Frame  | A   | B   | C  | 1     | 2     | 3   | 4   | 5     | 6     | 7   | 8  | 9     | GLAND     |
|--------|-----|-----|----|-------|-------|-----|-----|-------|-------|-----|----|-------|-----------|
| 1AI63  | 74  | 74  | 62 | M5x12 | M5x12 | N/A | N/A | M4x10 | N/A   | N/A | M4 | M4x10 | M16 & M25 |
| 1AI71  | 74  | 74  | 55 | M5x12 | M5x12 | N/A | N/A | M4x10 | N/A   | N/A | M4 | M4x10 | M16 & M25 |
| 1AI80  | 100 | 100 | 43 | M5x16 | M6x16 | N/A | N/A | M5x10 | N/A   | N/A | M4 | M6x25 | 2xM25     |
| 1AI90  | 105 | 105 | 41 | M5x20 | M6x20 | N/A | N/A | M5x10 | N/A   | N/A | M4 | M6x25 | 2xM25     |
| 1AI100 | 122 | 122 | 57 | M5x16 | M6x20 | N/A | N/A | M5x10 | N/A   | N/A | M5 | M6x25 | 2xM32     |
| 1AI112 | 122 | 122 | 57 | M5x16 | M6x20 | N/A | N/A | M5x10 | N/A   | N/A | M5 | M6x25 | 2xM32     |
| 1AI132 | 122 | 122 | 57 | M5x16 | M6x20 | N/A | N/A | M5x10 | N/A   | N/A | M5 | M6x25 | 2xM32     |
| 1AI160 | 205 | 170 | 84 | M6x16 | M6x20 | N/A | N/A | M8x16 | M4x20 | M3  | M8 | M8x25 | 2xM40     |
| 1AI180 | 205 | 170 | 84 | M6x16 | M6x20 | N/A | N/A | M8x16 | M4x20 | M3  | M8 | M8x25 | 2xM40     |
| 1AI200 | 205 | 170 | 84 | M6x16 | M6x20 | N/A | N/A | M8x16 | M4x20 | M3  | M8 | M8x25 | 2xM40     |

# ID TERMINAL BOX DATA



| Frame | A   | B   | C   | 1     | 2     | 3      | 4      | 5      | 6     | 7   | 8   | 9      | GLAND |
|-------|-----|-----|-----|-------|-------|--------|--------|--------|-------|-----|-----|--------|-------|
| 1D80  | 118 | 118 | 57  | M5x16 | M6x16 | N/A    | N/A    | M6x10  | N/A   | N/A | M5  | M6x25  | 2xM25 |
| 1D90  | 118 | 118 | 57  | M5x16 | M6x16 | N/A    | N/A    | M6x10  | N/A   | N/A | M5  | M6x25  | 2xM25 |
| 1D100 | 118 | 118 | 57  | M5x16 | M6x16 | N/A    | N/A    | M6x10  | N/A   | N/A | M5  | M6x25  | 2xM32 |
| 1D112 | 118 | 118 | 57  | M5x16 | M6x16 | N/A    | N/A    | M6x10  | N/A   | N/A | M5  | M6x25  | 2xM32 |
| 1D132 | 118 | 118 | 57  | M5x16 | M6x16 | N/A    | N/A    | M6x10  | N/A   | N/A | M5  | M6x25  | 2xM32 |
| 1D160 | 200 | 164 | 84  | M6x16 | M6x20 | N/A    | N/A    | M8x16  | M4x15 | M3  | M8  | M8x30  | 2xM40 |
| 1D180 | 200 | 164 | 84  | M6x16 | M6x20 | N/A    | N/A    | M8x17  | M4x16 | M3  | M8  | M8x31  | 2xM40 |
| 1D200 | 285 | 190 | 107 | M6x16 | M8x30 | M8x20  | M8x20  | M8x20  | M4x15 | M3  | M10 | M8x30  | 2xM50 |
| 1D225 | 285 | 190 | 107 | M6x16 | M8x30 | M8x20  | M8x20  | M8x20  | M4x15 | M3  | M10 | M8x30  | 2xM50 |
| 1D250 | 314 | 218 | 117 | M6x25 | M8x30 | M10x20 | M10x20 | M10x20 | M4x15 | M3  | M10 | M10x30 | 2xM63 |
| 1D280 | 314 | 218 | 117 | M6x25 | M8x30 | M10x20 | M10x20 | M10x20 | M4x15 | M3  | M10 | M10x30 | 2xM63 |
| 1D315 | 500 | 294 | 165 | M8x30 | M8x30 | N/A    | N/A    | M10x16 | M4x15 | M3  | M12 | M10x50 | blank |
| 1D355 | 535 | 386 | 213 | M8x30 | M8x30 | M10x20 | M10x20 | M10x20 | M4x25 | M3  | M16 | M12x80 | blank |

# BEARING & OIL SEAL

## BEARING DATA



| Frame                  | DE     | NDE    | d   | D   | B  |
|------------------------|--------|--------|-----|-----|----|
| 1AI63                  | 6201ZZ | 6201ZZ | 12  | 32  | 10 |
| 1AI71                  | 6202ZZ | 6202ZZ | 15  | 35  | 11 |
| 1AI/1D80               | 6204ZZ | 6204ZZ | 20  | 47  | 14 |
| 1AI/1D90               | 6205ZZ | 6205ZZ | 25  | 52  | 15 |
| 1AI/1D100              | 6206ZZ | 6206ZZ | 30  | 62  | 16 |
| 1AI/1D112              | 6306ZZ | 6306ZZ | 30  | 72  | 19 |
| 1AI/1D132              | 6308ZZ | 6308ZZ | 40  | 90  | 23 |
| 1AI/1D160              | 6309C3 | 6309C3 | 45  | 100 | 25 |
| 1AI/1D180              | 6311C3 | 6311C3 | 55  | 120 | 29 |
| 1AI/1D200              | 6312C3 | 6312C3 | 60  | 130 | 31 |
| 1AI/1D225              | 6313C3 | 6313C3 | 65  | 140 | 33 |
| 1AI/1D250              | 6314C3 | 6314C3 | 70  | 150 | 35 |
| 1AI/1D280              | 6316C3 | 6316C3 | 80  | 170 | 39 |
| 1D315 2P(Horizontal)   | 6217C4 | 6217C3 | 85  | 150 | 28 |
| 1D315 2P(Vertical)     | 6217C4 | 7217   | 85  | 150 | 28 |
| 1D315 4-8P(Horizontal) | NU319  | 6319C3 | 95  | 200 | 45 |
| 1D315 4-8P(Vertical)   | NU319  | 7319   | 95  | 200 | 45 |
| 1D355 2P(Horizontal)   | 6217C4 | 6217C3 | 85  | 150 | 28 |
| 1D355 2P(Vertical)     | 6217C4 | 7217   | 85  | 150 | 28 |
| 1D355 4-8P(Horizontal) | NU324  | 6324C3 | 120 | 260 | 55 |
| 1D355 4-8P(Vertical)   | NU324  | 7324   | 120 | 260 | 55 |

## OIL SEAL DATA



| Frame    | DE  |     |    | NDE |     |    |
|----------|-----|-----|----|-----|-----|----|
|          | d   | D   | B  | d   | D   | B  |
| 80       | 20  | 35  | 5  | 20  | 35  | 5  |
| 90       | 25  | 40  | 5  | 25  | 40  | 5  |
| 100      | 30  | 52  | 7  | 30  | 52  | 7  |
| 112      | 30  | 52  | 7  | 30  | 52  | 7  |
| 132      | 40  | 62  | 5  | 40  | 62  | 5  |
| 160      | 45  | 65  | 8  | 45  | 65  | 8  |
| 180      | 55  | 75  | 8  | 55  | 75  | 8  |
| 200      | 60  | 80  | 8  | 60  | 80  | 8  |
| 225      | 65  | 90  | 10 | 65  | 90  | 10 |
| 250      | 70  | 95  | 10 | 70  | 95  | 10 |
| 280      | 80  | 100 | 10 | 80  | 100 | 10 |
| 315 2P   | 100 | 130 | 12 | 100 | 130 | 12 |
| 315 4-8P | 115 | 140 | 12 | 115 | 140 | 12 |
| 355 2P   | 100 | 130 | 12 | 100 | 130 | 12 |
| 355 4-8P | 140 | 170 | 12 | 140 | 170 | 12 |

NOTE: The 1D250M2-(2-4 Pole) 75kW and the 1D280M2-(2-8 Pole) motors have labyrinth seals for bearing protection and no oil seal.

Western Electric reserves the right to make changes to the performance data and dimensions in this brochure without notice. This information is for reference only.