


|  <b>Bharat Bijlee</b>    |                                    | Data sheet for motors                                                                                                                                  |                     |             |  |             |  |          |  |
|---------------------------------------------------------------------------------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------|--|-------------|--|----------|--|
| <b>Manufacturer</b>                                                                                     | <b>Bharat Bijlee Ltd.</b>          | <b>Customer</b>                                                                                                                                        |                     |             |  |             |  |          |  |
| <b>Type of motor</b>                                                                                    | <b>3 Phase Induction Motor</b>     | <b>BBL Enquiry reference No</b>                                                                                                                        |                     |             |  |             |  |          |  |
| <b>Quantity</b>                                                                                         |                                    | <b>Customer P.O.Number</b>                                                                                                                             |                     |             |  |             |  |          |  |
| <b>Application</b>                                                                                      | <b>CUSTOMER TO FURNISH</b>         | <b>W.O. No. / SAP No.</b>                                                                                                                              |                     |             |  |             |  |          |  |
| Tag no.                                                                                                 |                                    | Output kW / pole                                                                                                                                       | 250 / 4P            |             |  |             |  |          |  |
| BBL type tef.                                                                                           |                                    | Frame size                                                                                                                                             | 355L                |             |  |             |  |          |  |
| <b>Installation details</b>                                                                             |                                    | <b>Applicable standards (latest edition)</b>                                                                                                           |                     |             |  |             |  |          |  |
| Area classification (Safe / Hazardous)                                                                  | Industrial safe area               | Performance: IS/IEC 60034-1 Maintenance IS:900                                                                                                         |                     |             |  |             |  |          |  |
| Location: indoor/outdoor/deck                                                                           | Indoor                             | Dimensions: IS 1231/IS 2223/IS:8223                                                                                                                    |                     |             |  |             |  |          |  |
| Altitude (meters)                                                                                       | 1000 or less                       | Vibrations: IS 12075                                                                                                                                   |                     |             |  |             |  |          |  |
|                                                                                                         |                                    | Noise level: IS 12065                                                                                                                                  |                     |             |  |             |  |          |  |
| <b>Hazardous area details</b>                                                                           |                                    | <b>Supply conditions and permissible variations (grid supply)</b>                                                                                      |                     |             |  |             |  |          |  |
| Area classification GAS (Zone 1/Zone 2)                                                                 | N.A.                               | Number of phases                                                                                                                                       | Three               |             |  |             |  |          |  |
| Gas group                                                                                               | N.A.                               | Voltage (Volts) and permissible variation                                                                                                              | 415 ±10%            |             |  |             |  |          |  |
| Temp.class                                                                                              | N.A.                               | Frequency (Hz) and permissible variation                                                                                                               | 50 ±5%              |             |  |             |  |          |  |
| Type of Explosion protection (FLP/Type 'e'/Type 'n')                                                    | N.A.                               | Combined variation (absolute sum)                                                                                                                      | ±10%                |             |  |             |  |          |  |
| Approving authority for hazardous area                                                                  | Not Applicable                     |                                                                                                                                                        |                     |             |  |             |  |          |  |
| <b>Electrical parameters</b>                                                                            |                                    |                                                                                                                                                        |                     |             |  |             |  |          |  |
| <b>Starting performance</b>                                                                             |                                    |                                                                                                                                                        |                     |             |  |             |  |          |  |
| Method of starting                                                                                      | DOL                                | Starting current (%FLC)                                                                                                                                | 650                 |             |  |             |  |          |  |
| Load speed (rpm)                                                                                        | CUSTOMER TO FURNISH                | Starting torque (%FLT)                                                                                                                                 | 220                 |             |  |             |  |          |  |
| Motor GD <sup>2</sup> (kgm <sup>2</sup> )                                                               | 23.3                               | Pull out torque (%FLT)                                                                                                                                 | 250                 |             |  |             |  |          |  |
| Load GD <sup>2</sup> (kgm <sup>2</sup> )                                                                | CUSTOMER TO FURNISH                | Locked rotor withstand time (hot/cold) (sec)                                                                                                           | 15 / 30             |             |  |             |  |          |  |
| Load torque-speed curve                                                                                 | Parabolic TS curve                 | Number of consecutive starts (hot/cold) (nos.) provided Load GD2 = Motor GD2                                                                           | 2 / 3               |             |  |             |  |          |  |
| Starting time at rated voltage (sec)                                                                    | PLEASE FURNISH ALL ABOVE DETAILS   |                                                                                                                                                        |                     |             |  |             |  |          |  |
| <b>Running Performance</b>                                                                              |                                    |                                                                                                                                                        |                     |             |  |             |  |          |  |
| Efficiency class                                                                                        | IE2                                | Duty and designation                                                                                                                                   | Continuous (S1)     |             |  |             |  |          |  |
| Ambient temp./temp.rise by resistance (deg.C)                                                           | 50 / 70                            | CDF/Equivalent starts per hour/FI                                                                                                                      | -                   |             |  |             |  |          |  |
| Enclosure                                                                                               | TEFC (TOTALLY ENCLOSED FAN COOLED) | Insulation class / utilisation class on DOL                                                                                                            | F/B                 |             |  |             |  |          |  |
| Full load current (FLC) amps.                                                                           | 416                                | Rotor type (Squirrel Cage/ Slip ring )                                                                                                                 | Squirrel Cage       |             |  |             |  |          |  |
| Full load speed (rpm)                                                                                   | 1488                               | Rotor voltage/rotor current (RV/RA) (Volts/Amps)                                                                                                       | Not applicable      |             |  |             |  |          |  |
| Full load torque (FLT) kg-m                                                                             | 164                                | Stator/rotor time constant (min)                                                                                                                       | 156/211             |             |  |             |  |          |  |
| Efficiency in % at FL/0.75FL/0.5FL                                                                      | 95.1 94.9 93.5                     | Power factor at FL/0.75FL/0.5FL                                                                                                                        | 0.88 0.85 0.75      |             |  |             |  |          |  |
| <b>Mechanical parameters</b>                                                                            |                                    |                                                                                                                                                        |                     |             |  |             |  |          |  |
| Mounting                                                                                                | B3                                 | Mounting dimensions                                                                                                                                    | Refer GA drawing    |             |  |             |  |          |  |
| Shaft extention                                                                                         | Single cylindrical                 | Direction of rotation viewed from DE                                                                                                                   | Clockwise           |             |  |             |  |          |  |
| Degree of protection                                                                                    | IP 55                              | Suitable for bidirectional rotation                                                                                                                    | Yes                 |             |  |             |  |          |  |
| Method of cooling (TEFC/forced cooled/TEFC)                                                             | TEFC (IC 411)                      | Paint type                                                                                                                                             | Acrylic             |             |  |             |  |          |  |
| Net weight of motor (kgs.)                                                                              | 1680                               | Paint shade                                                                                                                                            | RAL 5000            |             |  |             |  |          |  |
|                                                                                                         |                                    | Earthing provision (two terminals on stator body)                                                                                                      | Yes                 |             |  |             |  |          |  |
| <b>Bearings</b>                                                                                         |                                    | <b>Terminal box</b>                                                                                                                                    |                     |             |  |             |  |          |  |
| Coupling (Direct/flexible/Belt & Pulley/Gearbox)                                                        | Direct                             | Terminal box location when viewed from DE                                                                                                              | As per GA drawing   |             |  |             |  |          |  |
| Dimensions of pulley (OD x width) mm                                                                    | -                                  | Direction of cable entry                                                                                                                               | As per GA drawing   |             |  |             |  |          |  |
| Bearings (roller/ball/angular contact)                                                                  | Ball /Ball                         | Cable size and type(Aluminium)                                                                                                                         | 2R X 3C X 300 SQ MM |             |  |             |  |          |  |
| Bearing size DE/NDE                                                                                     | 6322 C3 / 6322 C3                  | Earthing provision (one terminal in TB)                                                                                                                | Yes                 |             |  |             |  |          |  |
| Type of lubrication                                                                                     | Unirex-N3 - GREASE                 | No of phases/Winding connection/number of terminals                                                                                                    | 3 / DELTA / 6       |             |  |             |  |          |  |
| <b>Accessories</b>                                                                                      |                                    |                                                                                                                                                        |                     |             |  |             |  |          |  |
| RTDs - 3 numbers simplex (w/o controller)                                                               |                                    | Arrow plate for direction of rotation                                                                                                                  |                     |             |  |             |  |          |  |
| BTDS - 1 number per bearing (w/o controller)                                                            |                                    | Double compression glands (main cable)                                                                                                                 |                     |             |  |             |  |          |  |
| Space heaters - single phase 50z, 230V                                                                  |                                    | Double compression glands (Space heater/thermistors/RTDs)                                                                                              |                     |             |  |             |  |          |  |
| Thermistors - PTC , 1 number per phase                                                                  |                                    | Brake (Type/voltage/torque)                                                                                                                            |                     |             |  |             |  |          |  |
| Additional T-Box for Accessories                                                                        |                                    |                                                                                                                                                        |                     |             |  |             |  |          |  |
| Additional nameplate                                                                                    |                                    |                                                                                                                                                        |                     |             |  |             |  |          |  |
| <b>Notes:</b>                                                                                           |                                    |                                                                                                                                                        |                     |             |  |             |  |          |  |
| 1)All performance values are subject to IS/IEC 60034-1 tolerances, unless otherwise specified.          |                                    |                                                                                                                                                        |                     |             |  |             |  |          |  |
| 2)Performance values are at rated voltage and rated frequency condition and for DOL starting condition. |                                    |                                                                                                                                                        |                     |             |  |             |  |          |  |
| 3)Motor GD <sup>2</sup> = Load GD <sup>2</sup> assumed wherever not mentioned.                          |                                    |                                                                                                                                                        |                     |             |  |             |  |          |  |
| 4)Where starting time is more than 10 seconds, provision of heavy duty relays is mandatory.             |                                    |                                                                                                                                                        |                     |             |  |             |  |          |  |
| 5)Kilowatt rating is mandatory and HP is approximate.                                                   |                                    |                                                                                                                                                        |                     |             |  |             |  |          |  |
| 6) Accessories provided are marked as "YES"                                                             |                                    |                                                                                                                                                        |                     |             |  |             |  |          |  |
|                                                                                                         |                                    | <table border="1"> <tr> <td>Prepared by</td> <td></td> </tr> <tr> <td>Approved by</td> <td></td> </tr> <tr> <td>Revision</td> <td></td> </tr> </table> |                     | Prepared by |  | Approved by |  | Revision |  |
| Prepared by                                                                                             |                                    |                                                                                                                                                        |                     |             |  |             |  |          |  |
| Approved by                                                                                             |                                    |                                                                                                                                                        |                     |             |  |             |  |          |  |
| Revision                                                                                                |                                    |                                                                                                                                                        |                     |             |  |             |  |          |  |
| <b>Project:</b>                                                                                         |                                    | <b>Contractor/Client</b>                                                                                                                               |                     |             |  |             |  |          |  |
| <b>Consultant</b>                                                                                       |                                    | <b>Package</b>                                                                                                                                         |                     |             |  |             |  |          |  |
|                                                                                                         |                                    | Date:                                                                                                                                                  |                     |             |  |             |  |          |  |