


|  <b>Bharat Bijlee</b>    |                                    | Data sheet for motors   |                   |
|---|------------------------------------|---|-------------------|
| Manufacturer  | Bharat Bijlee Ltd.                 | Customer  |                   |
| Type of motor   | 3 Phase Induction Motor            | BBL Enquiry reference No  |                   |
| Quantity  |                                    | Customer P.O.Number   |                   |
| Application   | CUSTOMER TO FURNISH                | W.O. No. / SAP No.  |                   |
| Tag no.   |                                    | Output kW / pole  | 15 / 6P           |
| BBL type tef.   |                                    | Frame size  | 180L              |
| Installation details  |                                    | Applicable standards (latest edition)   |                   |
| 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   |                   |
| Hazardous area details  |                                    | Supply conditions and permissible variations (grid supply)                      |                   |
| 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                     |   |                   |
| Electrical parameters   |                                    |   |                   |
| Starting performance  |                                    |   |                   |
| Method of starting  | DOL                                | Starting current (%FLC)   | 550               |
| Load speed (rpm)  | CUSTOMER TO FURNISH                | Starting torque (%FLT)  | 230               |
| Motor GD <sup>2</sup> (kgm <sup>2</sup> )   | 0.74                               | Pull out torque (%FLT)  | 250               |
| Load GD <sup>2</sup> (kgm <sup>2</sup> )  | CUSTOMER TO FURNISH                | Locked rotor withstand time (hot/cold) (sec)                                    | 12 / 24           |
| Load torque-speed curve   | Parabolic TS curve                 | Number of consecutive starts (hot/cold) (nos.)<br>provided Load GD2 = Motor GD2 | 2 / 3             |
| Starting time at rated voltage (sec)  | PLEASE FURNISH ALL ABOVE DETAILS   |   |                   |
| Running Performance   |                                    |   |                   |
| 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.   | 28.4                               | Rotor type (Squirrel Cage/ Slip ring )  | Squirrel Cage     |
| Full load speed (rpm)   | 975                                | Rotor voltage/rotor current (RV/RA) (Volts/Amps)                                | Not applicable    |
| Full load torque (FLT) kg-m   | 15                                 | Stator/rotor time constant (min)  | 108/146           |
| Efficiency in % at FL/0.75FL/0.5FL  | 89.7 89.7 89.0                     | Power factor at FL/0.75FL/0.5FL   | 0.82 0.78 0.68    |
| Mechanical parameters   |                                    |   |                   |
| 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.)  | 183                                | Paint shade   | RAL 5000          |
|   |                                    | Earthing provision (two terminals on stator body)                               | Yes               |
| Bearings  |                                    | Terminal box  |                   |
| 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 16 Sqmm |
| Bearing size DE/NDE   | 6310 2Z C3 / 6210 2Z C3            | Earthing provision (one terminal in TB)   | Yes               |
| Type of lubrication   | LITHIUM SOAP BASE GREASE           | No of phases/Winding connection/number of terminals                             | 3 / DELTA / 6     |
| Accessories   |                                    |   |                   |
| 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  |                                    |   |                   |
| Notes:  |                                    |   |                   |
| 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"   |                                    |   |                   |
|   |                                    | Prepared by   |                   |
|   |                                    | Approved by   |                   |
|   |                                    | Revision  |                   |
| Project:  |                                    | Contractor/Client   |                   |
| Consultant  |                                    | Package   |                   |
|   |                                    | Date:   |                   |