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|---|--|--|----------------------------|
|  <b>Bharat Bijlee</b>  |  | <i>Data sheet for motors</i>   |                            |
| <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   | 180 / 4P                   |
| BBL type tef.   | 2J31L463                                     | Frame size   | MJ315                      |
| <b>Installation details</b>   |  | <b>Applicable standards (latest edition)</b>                                 |                            |
| Area classification (Safe / Hazardous)  | Hazardous                                    | Performance: IS/IEC 60034-1 Maintenance IS:900                               | FLP Motors: IS/IEC 60079-1 |
| 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)   | ZONE I                                       | Number of phases   | Three                      |
| Gas group   | IIA, IIB                                     | Voltage (Volts) and permissible variation                                    | 415 ±10%                   |
| Temp.class  | T4   | Frequency (Hz) and permissible variation                                     | 50 ±5%                     |
| Type of Explosion protection (FLP/Type 'e'/Type 'n')  | Ex d   | Combined variation (absolute sum)  | ±10%                       |
| Approving authority for hazardous area  | If Coal Mine application then DGMS else PESO |  |                            |
| <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)   | 250                        |
| Motor GD <sup>2</sup> (kgm <sup>2</sup> )   | 15.6   | Pull out torque (%FLT)   | 300                        |
| 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)   | 45 / 75                                      | 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.   | 307  | Rotor type (Squirrel Cage/ Slip ring )                                       | Squirrel Cage              |
| Full load speed (rpm)   | 1487   | Rotor voltage/rotor current (RV/RA) (Volts/Amps)                             | Not applicable             |
| Full load torque (FLT) kg-m   | 118  | Stator/rotor time constant (min)   | 144/194                    |
| Efficiency in % at FL/0.75FL/0.5FL  | 95.0 94.7 93.2                               | Power factor at FL/0.75FL/0.5FL  | 0.86 0.83 0.76             |
| <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/TESC)   | TEFC (IC 411)                                | Paint type   | Acid Alkali Proof          |
| Net weight of motor (kgs.)  | 1303   | Paint shade  | 632 as per IS 5            |
|   |  | 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          |
| Dimenssions 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 185 SQ MM        |
| Bearing size DE/NDE   | 6319 C3 / 6319 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"   |  |  |                            |
|   |  | Prepared by  |                            |
|   |  | Approved by  |                            |
|   |  | Revision   |                            |
| <b>Project:</b>   |  | <b>Contractor/Client</b>   |                            |
| <b>Consultant</b>   |  | <b>Package</b>   |                            |
|   |  | Date:  |                            |

