Bharat Bijlee

*Data sheet for motors*

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| **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 | 18.5 / 4P |
| BBL type Ref. | MD18L433 | Frame size | MJ180 |
| ***Installation details*** | | ***Applicable standards (latest edition)*** | |
| Area classification (Safe / Hazardous) | Hazardous area | 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 | |
| ***Hazardous area details*** | | ***Supply conditions and permissible variations (grid supply)*** | |
| Area classification GAS (Zone 1/Zone 2) | ZONE I | Number of phases | Three |
| Gas group | IIA, IIB | Voltage (Volts) and permisible variation | 415 ±10% |
| Temp.class | T5 | 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 Mine application then DGMS else PESO | | |
| ***Electrical parameters*** | | | |
| ***Starting performance*** | | | |
| Method of starting | DOL | Starting current (%FLC) | 600 |
| Load speed (rpm) | CUSTOMER TO FURNISH | Starting torque (%FLT) | 240 |
| Motor $GD^2$ ($kgm^2$) | 0.46 | Pull out torque (%FLT) | 250 |
| Load $GD^2$ ($kgm^2$) | CUSTOMER TO FURNISH | Locked rotor withstand time (hot/cold) (sec) | 10 / 20 |
| 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 | | |
| ***Running Performance*** | | | |
| Efficiency class | - | 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. | 33.2 | Rotor type (Squirrel Cage/ Slip ring ) | Squirrel Cage |
| Full load speed (rpm) | 1460 | Rotor voltage/rotor current (RV/RA) (Volts/Amps) | Not applicable |
| Full load torque (FLT) kg-m | 12.3 | Stator/rotor time constant (min) | 108/146 |
| Efficiency in % at FL/0.75FL/0.5FL | 91.2 91.2 90.0 | Power factor at FL/0.75FL/0.5FL | 0.85 0.82 0.72 |
| ***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/TESC) | TEFC (IC 411) | Paint type | Acid Alkali Proof |
| Net weight of motor (kg) | 215 | Paint shade | 632 as per IS 5 |
| | | 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 |
| 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 50 SQ MM |
| Bearing size DE/NDE | 6310 2Z C3/6310 2Z C3 | Earthing provision (one terminal in TB) | Yes |
| Type of lubrication | LITHIUM SOAP BASE GREASE | No of phase/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/Thermisters/RTDs) | |
| Thermisters - PTC | | 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 $GD^2$ = Load $GD^2$ 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"

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| **Prepared by** | |
| **Approved by** | |

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| | | | | **Revison** | |
| **Project:** | | **Contractor/Client** | | **Date:** | |
| **Consultant** | | **Package** | | | |