

 Bharat Bijlee		<i>Data sheet for motors</i>							
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	9.3	/ 2P				
BBL type tef.		2J16M233	Frame size	MJ160					
Installation details			Applicable standards (latest edition)						
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						
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 permissible 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 Coal 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)	200					
Motor GD ² (kgm ²)		0.142	Pull out torque (%FLT)	250					
Load GD ² (kgm ²)		CUSTOMER TO FURNISH	Locked rotor withstand time (hot/cold) (sec)	8	/ 16				
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		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.		16.5	Rotor type (Squirrel Cage/ Slip ring)	Squirrel Cage					
Full load speed (rpm)		2940	Rotor voltage/rotor current (RV/RA) (Volts/Amps)	Not applicable					
Full load torque (FLT) kg-m		3.08	Stator/rotor time constant (min)	90/122					
Efficiency in % at FL/0.75FL/0.5FL	88.9	88.6 86.0	Power factor at FL/0.75FL/0.5FL	0.88	0.86 0.81				
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	Acid Alkali Proof					
Net weight of motor (kgs.)		147	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 35 SQ MM					
Bearing size DE/NDE	6209 2Z C3	/ 6209 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 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"									
						Prepared by			
						Approved by			
						Revision			
Project:		Contractor/Client		Date:					
Consultant		Package							

