



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			9.3	/	2P	
BBL type Ref.			MD13M2N5	Frame size			MJ132			
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 permissible variation			415	±10%		
Temp.class		T5		Frequency (Hz) and permissible variation			50	±5%		
Type of Explosion protection (FLP/Type 'a'/Type 'b')		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)			650			
Load speed (rpm)		CUSTOMER TO FURNISH		Starting torque (%FLT)			240			
Motor GD ² (kgm ²)		0.098		Pull out torque (%FLT)			290			
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		-		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)		2920		Rotor voltage/rotor current (RV/RA) (Volts/Amps)			Not applicable			
Full load torque (FLT) kg-m		3.11		Stator/rotor time constant (min)			90/122			
Efficiency in % at FL/0.75FL/0.5FL		88.0	86.0	83.0	Power factor at FL/0.75FL/0.5FL			0.89	0.85	0.76
Mechanical parameters										
Mounting		B5		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)		120		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)			1R X 3C X 16 SQ MM			
Bearing size DE/NDE		6208 2Z C3/6208 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"										
							Prepared by			
							Approved by			

				Revision	
Project:		Contractor/Client		Date:	
Consultant		Package			