



### *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			2.2	/	2P
BBL type Ref.			MD09L253	Frame size			MJ90		
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)			600		
Load speed (rpm)		CUSTOMER TO FURNISH		Starting torque (%FLT)			300		
Motor GD <sup>2</sup> (kgm <sup>2</sup> )		0.0093		Pull out torque (%FLT)			300		
Load GD <sup>2</sup> (kgm <sup>2</sup> )		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.		4.4		Rotor type (Squirrel Cage/ Slip ring )			Squirrel Cage		
Full load speed (rpm)		2830		Rotor voltage/rotor current (RV/RA) (Volts/Amps)			Not applicable		
Full load torque (FLT) kg-m		0.76		Stator/rotor time constant (min)			84/113		
Efficiency in % at FL/0.75FL/0.5FL		82.5	80.0	76.0	Power factor at FL/0.75FL/0.5FL			0.85	0.82 0.74
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)		50		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 6 SQ MM		
Bearing size DE/NDE		6205 2Z C3/6205 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 <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		Date:	
Consultant		Package			