Bharat Bijlee

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 / 6P
BBL type Ref.		MD16L665	Frame size	MJ160

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)	550	
Load speed (rpm)	CUSTOMER TO FURNISH		Starting torque (%FLT)	210	
Motor GD^2 (kgm^2)	0.34		Pull out torque (%FLT)	250	
Load GD^2 (kgm^2)	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				

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.	18.4			Rotor type (Squirrel Cage/ Slip ring)	Squirrel Cage		
Full load speed (rpm)	960			Rotor voltage/rotor current (RV/RA) (Volts/Amps)	Not applicable		
Full load torque (FLT) kg-m	9.44			Stator/rotor time constant (min)	90/122		
Efficiency in % at FL/0.75FL/0.5FL	88.0	88.0	87.0	Power factor at FL/0.75FL/0.5FL	0.80	0.74	0.64

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)	169		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 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	

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