A.Y.C.L-(ENGG.DIVN.)

KALYANI UNIT

PURCHASE REQUISITION

FORM NO:-

Print Date: 9/11/2024

☐ Purchase Copy
☐ Planning Copy

S.O. NO	Date
Ref No	Section Planning

PR No.	Date
K-24-PR-00791	9/11/2024
JOB NO.	BOM NO.
24096C	

Remarks:

☐ Hold ☐ Passed

Sl.	Item Code	Cat	HSN/SAC Code	Description/Drawing No Remarks	<--Procu.--> Qty	UOM	<-Factory-> Qty	UOM	Delivery Within <---Schedule--->	REM
1	#24096C18AM1	LP	8501	2600 KW X 4P, VFD COMPATIBLE, 6.6 KV-50 HZ, 3 PHASE FOOT MOUNTED, AC HT SQUIRREL CAGE INDUCTION MOTOR, FOR 2240 MM DIA. DI.BAB-42 COMBUSTION AIR FAN,(VFD COMPATIBLE), MOTOR SHOULD HAVE PT 100 TYPE (DUPLEX) FOR WINDING TEMPERATURE (6 NOS) & RTD DUPLEX TYPE FOR MOTOR BRG. TEMPERATURE (2 NOS.) PROVISION ON MOTOR FOR 4 NOS. VIBRATION SENSOR FIXING, SIZE: M8x1.25Px15 DEEP. PAINT: RAL7030. (FRAME SIZE- AS PER MOTOR MANUFACTURAR). COMPLETE IN ALL RESPECT AS PER TS CURVE & MOTOT SPEC. SHEET ATTACHED. QTY:- 1 NO/FAN. MAKE:- TMEIC/SIEMENS/ABB.	1.000	NO	1.000	NO	09/11/25 - 09/11/25	P/E

REM: P = Procurement S = Sub-Contract
I = Existing Item Rate; R = Rate Contract; E = Enquiry; Z = Own Make Item (Proc. Not Reqd.)

NOTE:-
1 Drawing enclosed herewith.
2 Test Certificates & inspection reports to be produced.

09/11/24
Indentor
1547/Aksar Ali

09/11/2024
Authorised Signatory
39494

(ENGG.DIVN.)

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Sl.	Item Code	Cat	HSN/SAC Code	Description/Drawing No Remarks	<--Procu.--> Qty UOM	<-Factory-> Qty UOM	Delivery Within <---Schedule--->	REM
2	#24096C28AM1	LP	8501	2600 KW X 4P, VFD COMPATIBLE, 6.6 KV-50 HZ, 3 PHASE FOOT MOUNTED, AC HT SQUIRREL CAGE INDUCTION MOTOR, FOR 2240 MM DIA. DI.BAB-42 COMBUSTION AIR FAN,(VFD COMPATIBLE), MOTOR SHOULD HAVE PT 100 TYPE (DUPLEX) FOR WINDING TEMPERATURE (6 NOS) & RTD DUPLEX TYPE FOR MOTOR BRG. TEMPERATURE (2 NOS.) PROVISION ON MOTOR FOR 4 NOS. VIBRATION SENSOR FIXING, SIZE: M8x1.25Px15 DEEP. PAINT: RAL7030. (FRAME SIZE- AS PER MOTOR MANUFACTURAR). COMPLETE IN ALL RESPECT AS PER TS CURVE & MOTOT SPEC. SHEET ATTACHED. QTY:- 1 NO/FAN. MAKE:- TMEIC/SIEMENS/ABB.	2.000 NO	2.000 NO	09/11/25 - 09/11/25	P/E

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Indentor

1547/Aksar Ali

09/11/2024

Authorised Signatory

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ANNEXURE -E-4

NVERTER DUTY 6.6 KV HT MOTOR

Serial No.	Parameters	Description
1.0	Type	• HT Squirrel cage induction motor. Voltage grade shall be 6.6 kV. Shall be specifically designed for 6.6kV matching with VFD Output. • Inverter Duty
2.0	Standard	- IEC: 60034
3.0	Constructional Features	
3.i	Frame size and rating	As per IEC
3.ii	Stator Frame	- Fabrication Steel/ High grade cast Iron
3.iii	Stator Core	- Laminated sheets of high grade low loss silicon steel
3.iv	Motor body	- Grey iron casting as per IS:210-1978
3.v	Casing Feet	- Integral with the motor frame
3.vi	Body Design	- Prevent breakage or other failure due to vibrations normally encountered in heavy industries.
3 vii	Protection for Motor & Bearing	IP – 55 (with canopy for motor if installed outdoor) as per as per IS 4691- (As per IEC standard)
3.viii	Shaft ends & Extension	- Forged Steel shaft Proper drilling and tapping shall be provided for mounting of tachos for speed feedback (if required)
3.ix	Bearings	Anti-friction roller bearing Bearings shall be suitable for running of motor in either direction.
3.x	Bearing Insulation	Against circulating shaft currents
3.xi	Hazardous Area safety design	Considered Safe Area
3.xii	Indication of Direction of rotation	By Arrow blocks on non-driving end .Motor shall be capable of unidirectional rotation.
3.xiii	RTD & BTD(PT100type)	-All motors shall be provided with PT100 type (duple)x6nos or (simple)x12 numbers stator winding temperature detectors & 2nos Bearing (DE & NDE) temperature detectors (Duplex) for monitoring Alarm & Trip conditions. -For HT motors, temperature of each RTD (for winding , bearing) should be taken to VFD drive through scanner at VFD panel (2sets of Analogue output shall be considered at scanner, one shall be connected to VFD & other shall be connected to DCS) for monitoring and control. Also through Profinet communication from VFD, temperature parameters will be communicated to main Plant automation system (DCS) for online monitoring.

ANNEXURE -E-4

		Limit value contacts for alarm and tripping shall be generated in the VFD along with the display of winding and bearing temperature. - Local Dial Gauge to be provided for DE & NDE bearing temperature indicator for motors rated 1000KW and above.
3.xiv	Vibration Probes & Vibration monitoring	-shall be provided for X and Y axis at DE & NDE end of motor bearing. -Accordingly vibration pad shall be provided. -Vibration monitoring shall be achieved by providing vibration monitors at field (pedestal mounted). -Vibration monitors shall be connected with VFD drive and JSW PLC for monitoring and control. -PLC Signal should be 4-20mA.
3.v	Paint shade	RAL 7030
4	**Terminal Box**	
4.i	Protection	IP:55
4.ii	Type	Main TB-Phase segregated Neutral TB- Phase segregated.
4.iii	Location	Main TB-RHS viewed from DE / On top Neutral TB- RHS viewed from DE
4.iv	Suitablity	Termination of XLPE cables with heat shrinkable cable end seals Each TB to have 2 nos inlets to accommodate any parallel cables as required.
4.v	Reversible	To suit cable entry from TOP, Bottom
4.vi	Earthing stud	Inside Main TB for Protective earth conductor termination
4.vii	No of additional Terminal Boxes	Separate TBs for space Heater, RTD, BTD Vibration monitor etc.
4.viii	Fault withstand (Min.)	Rated short circuit level of the system voltage for 0.25Sec.
4.ix	Interchangeability	Line side & neutral side TB s shall be interchangeable.
5.0	Cooling	CACA.
6.0	**Quality of Operations**	
6.i	Vibration intensity	Shall be as per IEC Standards
6.ii	Noise level	Shall be as per IEC Standards
6.iii	Balancing	Motors shall be dynamically balanced with full/half key on the shaft- end and fan
7.0	**Electrical Design**	
7.i	Efficiency	High efficiency design of 95% or higher at Full load
7.ii	Starting & Direction of Rotation	Variable Frequency Drive. Direction of Rotation -Bidirectional
7.iii	Min Voltage for start & Run	85% of rated Voltage at terminal
7.iv	Starting Torque	1.6 time from rated torque (As per IEC Standards)
7.v	Starting Current	Controlled by VFD. Limitation as per VFD design.

ANNEXURE -E-4

7.vi	Load Type	Variable Torque for Fan application.
7.vii	Peak transient voltage	Shall be as per VFD manufacturer requirement.
7.viii	Minimum rise time	Shall be as per VFD manufacturer requirement.
7.ix	No of pole	4 pole preferable
7.x	Duty	Continuous, inverter duty and suitable for Process Fan application
7.xi	Stall time	• Minimum 60 sec for constant torque applications • Higher stall time as per application requirement
7.xii	Start permissible	3 cold/2 Hot
7.xiii	Start/Hour	6 equally spaced
7.xiv	Overload capability	Capable of withstanding 160% Overload for 15 sec.
7.xv	Max speed permissible	120% over speed for 2 minutes
7.xvi	Insulation	Class H with temp Rise limited to Class F Insulation materials with additional phase insulating material extra end turn bracing
7.xvii	Impregnation of wound stator	VPI
7.xviii	Derating of VFD	As per manufacturing and design standards
7.xix	Space Heater	Required & automatically off during RUN
7.xx	Surge protection	As required

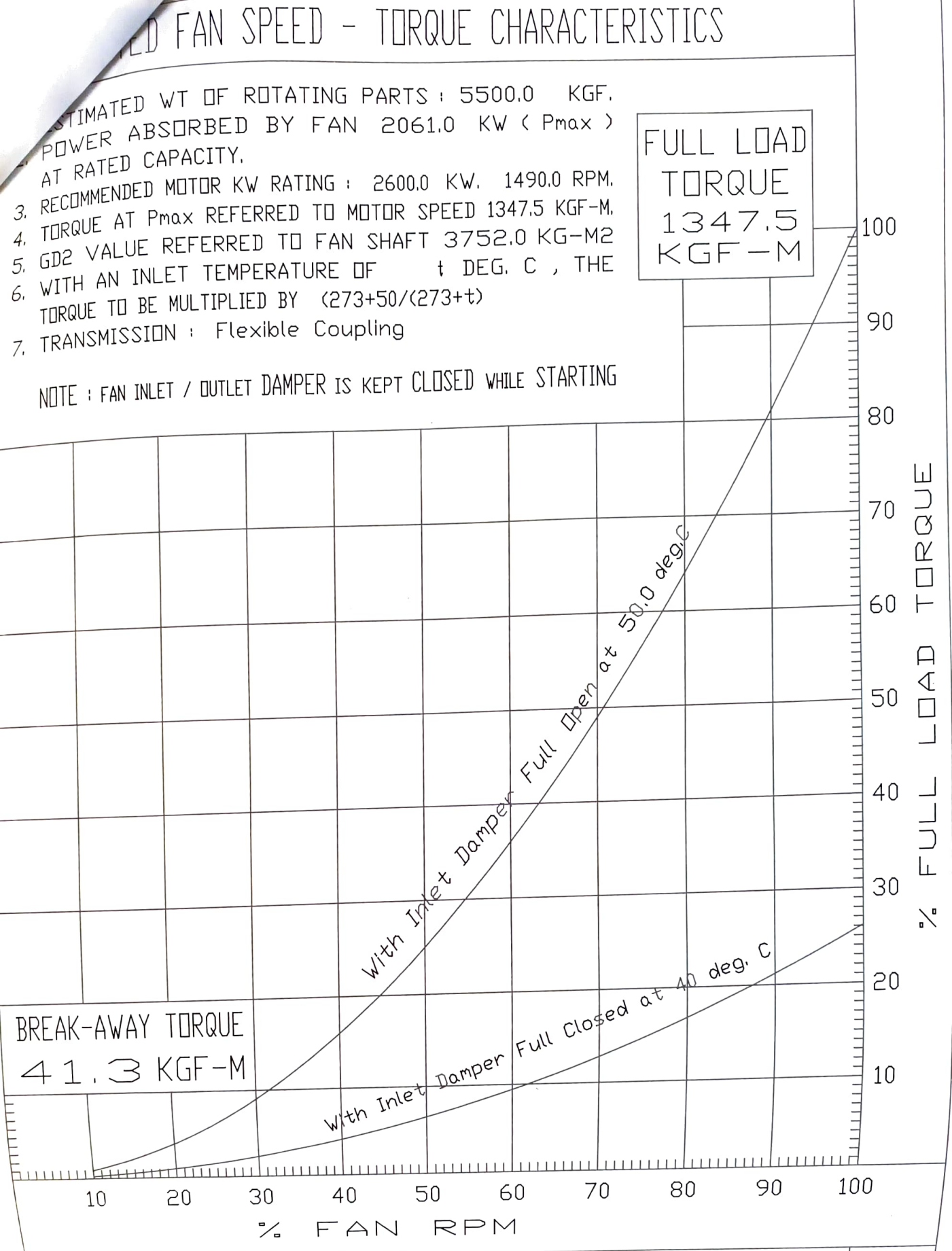
ED FAN SPEED - TORQUE CHARACTERISTICS

STIMATED WT OF ROTATING PARTS : 5500.0 KGF.
2. POWER ABSORBED BY FAN 2061.0 KW (Pmax) AT RATED CAPACITY.
3. RECOMMENDED MOTOR KW RATING : 2600.0 KW. 1490.0 RPM.
4. TORQUE AT Pmax REFERRED TO MOTOR SPEED 1347.5 KGF-M.
5. GD2 VALUE REFERRED TO FAN SHAFT 3752.0 KG-M2
6. WITH AN INLET TEMPERATURE OF t DEG. C , THE TORQUE TO BE MULTIPLIED BY (273+50/(273+t)
7. TRANSMISSION : Flexible Coupling

NOTE : FAN INLET / OUTLET DAMPER IS KEPT CLOSED WHILE STARTING

FULL LOAD TORQUE 1347.5 KGF-M

BREAK-AWAY TORQUE 41.3 KGF-M



Client & Ref. : JSW DOLVI

Fan Size & Type : 2240 MM DIA DI BAB-42 RPM : 1490 BAR : 760mm Hg.

Application : CA FAN Control : VFD & ML DAMPER

Ref. L 1 0 6 Date : 08.07.2024 Graph No. :

ANDREW YULE & COMPANY LIMITED

FAN REF. NO. 24/0172