

	PRODUCT SPECIFICATION HYDRO PROJECTS ENGINEERING	241516862
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PURCHASE SPECIFICATION OF REFRIGERATED TYPE LP AIR DRYER		

1. DESCRIPTION:

Refrigerated type compressed air dryer of non-cyclic type, which handles the rated flow rate and must be fully automatic with Heat exchanger, hermetically sealed refrigeration compressor, Moisture Separator, air cooled condenser and control unit.

2. APPLICATION:

The air dryer shall be installed in between the LP air compressor and Air receiver. This will provide the dry air for using in auxiliary air system (For brake and Shaft seal system) in the hydropower house.

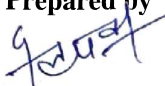
3. SCOPE OF SUPPLY:

Sr. No.	Item Description	Quantity	Remarks
1	Refrigerated type LP Air dryer	2 Nos.	For supplying dry air to auxiliary air system

4. SPECIFICATION:

4.1) TECHNICAL REQUIREMENTS:

Sr. No.	Parameters	Technical Data / Requirements
i)	Type of Dryer	Refrigerated type
ii)	Type of Operation	Non Cyclic type with auto dew point control system
(iii)	Type of Heat exchanger	[Aluminum fins type-Honey comb construction] Or [Tube in tube type] Or [Shell & Tube type] Or as per manufacturer standard
(iv)	Refrigerant Gas	[R134A] Or [R407C]
(v)	Type of compressor	Hermetically sealed refrigeration compressor

Rev. No.	Date of Rev.	Remarks	Approved by			
			 मनीष साहू / MANISH SAHU वरिष्ठ उप महाप्रबंधक / Sr. Dy. General Manager एच. पी. ई. विभाग / HPE Division बी. एच. ई. एल. भोपाल / BHEL, BHOPAL Manish Sahu Sr. DGM-HPE			
			Prepared by	Checked by		Date of
			 Dalpat Borana Mgr.-HPE	Amit Pandey DGM-HPE	Amit Pandey DGM-HPE	07-02-22

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(v)	Type of condenser	Air cooled
(vi)	Moisture Separator	Centrifugal type / As per manufacturer standard
(vii)	Type of Auto drain valve	Level sensor based / Electronic time based / as per manufacturer standard
(viii)	Inlet air temperature	50 Deg C (Maximum)
(ix)	Ambient temperature	3 °C to (+) 35 °C
(x)	Normal working pressure	7 kg/cm ²
(xi)	Sound level	< 80 dB at distance of 1 Meter
(xii)	Inlet / Outlet process connection	1½" BSP (F) (If required, suitable adaptor to be provided for final process connection as mentioned above)
(xiii)	Pressure drop across dryer	≤ 0.5 Bar
(xiv)	Dew point temperature	+ 3 Deg C
(xv)	Enclosure	Sheet metal enclosure with power coating
(xvi)	Power supply	230V AC ±10%, 1Phase, 50 Hz. [Preferable] / [415 VAC ±10%, 3Phase, 50 Hz]
(xvii)	Control & Display	a) Must have start/stop control switch, b) Power On / Off indication c) Any other control parameters / indications / Control switches required for proper automatic functioning of air dryer should be included.

Any other feature necessary for the smooth operation of system may be considered in the offer.

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			Dalpat Borana Mgr.-HPE	Amit Pandey DGM-HPE	Amit Pandey DGM-HPE	07-02-22

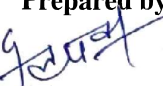
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4.2) GUARANTEED PARTICULARS :

Sr. No.	Parameters	Technical Data / Requirements
(i)	Flow at inlet of Air dryer	➤ 60 CFM at 7 kg/cm ² with air temperature of 50 Deg C and Ambient temperature of 35 Deg C.
(ii)	Air dryer capacity	a) Vendor should offer air dryer of capacity (Nominal capacity of minimum 60 CFM or more) to suit the operating conditions of inlet air as per sr. no. (4.2.i). b) Vendor has to submit the calculation sheet of Air dryer capacity selection for reference.

4.3) DATA TO BE FURNISHED BY SUPPLIER:

Sr. No.	Parameters	Technical Data / Requirements
(i)	Power consumption in kW (At Full capacity air inlet)	Bidder to specify
(ii)	Dimension and Weight of air dryer	Bidder to specify
(iii)	Pressure drop across air dryer	Bidder to specify

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			 Dalpat Borana Mgr.-HPE			07-02-22
				Amit Pandey DGM-HPE	Amit Pandey DGM-HPE	

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5. DOCUMENTS TO BE FURNISHED:

Along with the offer:

1. Flow diagram of the offered system
2. Air dryer capacity selection calculation
3. Guaranteed technical particulars
4. Data as per our specification to be furnished by supplier
5. Product leaflets
6. List of deviations, if any. Otherwise, it shall be understood that the vendor is meeting all the requirements specified by us.

Vendor to note that if above documents are not furnished along with the offer; the offer shall be liable for outright rejection.

After placement of order:

- (a) Supplier has to submit the GA drawing along with BOM and Schematic diagram and QAP in line with BHEL QAP for approval within 4 weeks from the date of placement of PO.
- (b) Wiring diagram of Air dryer for approval

At the time of supply:

- (a) 2 copies of test certificates and guarantee certificates to BHEL items. 1 copy of the above documents shall be put inside the case/ package.
- (b) Shipping / packing lists of the Air dryer
- (c) 6 Sets of O & M manual with part list, Electrical circuit drawings, GA drawing etc.

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MANUFACTURER'S Logo		MANUFACTURER'S Name and Address		SAMPLE QUALITY ASSURANCE PLAN				Project : PO /Indent No:			
				Item : Refrigerated Type LP Air Dryer SUB-System: Governing system		QP No. : QA/HPE/241516862/001 Rev.No. : 00 Date : 31-01-2022 page : 01 OF 01					
SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT / ACCEPTANCE NORM	FORMAT OF RECORD	AGENCY		REMARKS	
1.	2.	3.	4.	5.	6.	7.	8.	1	2	10.	
1	REFRIGERATED TYPE LP AIR DRYER	- VISUAL INSPECTION - DIMENSION CHECK - BOM CHECK - FUNCTIONAL TEST	Major	Performance	100%	-Technical Specification -Approved Drawings & -Approved Data Sheet	IR	P	W	-	
LEGEND: 1: MANUFACTURER/SUB-SUPPLIER 2: BHEL/ NOMINATED INSPECTION AGENCY P: PERFORM W: WITNESS AND V: VERIFICATION RR – REVIEW OF RECORD IR – INTERNAL RECORD JIR – JOINT INSPECTION REPORT											
QA-HYDRO		ENGINEERING- HPE									
(PREPARED & REVIEWED)											
Accepted by (Vendor' QC representative)											

NOTE : VENDOR HAS TO SUBMIT THE MANUFACTURER'S QUALITY ASSURANCE PLAN INLINE WITH BHEL SAMPLE QUALITY PLAN AFTER PLACEMENT OF PO FOR APPROVAL.