



PRASAR BHARATI  
(INDIA'S PUBLIC SERVICE BROADCASTER)  
O/o ADDITIONAL DIRECTOR GENERAL (E) (WZ)  
ALL INDIA RADIO & DOORDARSHAN  
P.B. ROAD, WORLI, MUMBAI-30.



NO.ADG (E)(WZ)/AIR-P/80 KVA AVR/ 2024-25

Dated. 23/04/2024

**Subject:** - Invitation of Budgetary Quote for the Supply of 80 KVA air cooled AVR at Akashvani Bhuj (Gujarat).

1. The budgetary quote form of the upcoming tender is enclosed herewith to offer comments, (if any) by prospective bidders/firms with budgetary quote.
2. Bidders/firms may please submit the above detail/ their quote on or before due date by e-mail to [sgvaidya@prasarbharati.gov.in](mailto:sgvaidya@prasarbharati.gov.in) and [mohanmahadeomose@prasarbharati.gov.in](mailto:mohanmahadeomose@prasarbharati.gov.in) or at following address.

**Sh. Suhas Vaidya**

Assistant Engineer

O/o Additional Director General (E-WZ)

Akashvani & Doordarshan, 2<sup>nd</sup> floor, A.O.A building,

Doordarshan Complex, Worli, Mumbai – 400030

Mobile No.: 9423781165

e-mail id: [sgvaidya@prasarbharati.gov.in](mailto:sgvaidya@prasarbharati.gov.in) ,  
[mohanmahadeomose@prasarbharati.gov.in](mailto:mohanmahadeomose@prasarbharati.gov.in)

**Due Date to offer Comments:** 03-05-2024

**Enclosed:**

1. Budgetary Quotation form of the upcoming tender is enclosed herewith.

(Suhas Vaidya)  
Assistant Engineer  
For Add. Director General (E ),WZ  
MUMBAI



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NO.ADG (E)(WZ)/AIR-P/80 KVA AVR/ 2024-25

Dated. 22/04/2024

**Budgetary Quotation Form**

**Subject:** - Invitation of Budgetary Quote for the Supply of 80 KVA air cooled AVR at Akashwani Bhuj (Gujarat)

**Last date of receipt of budgetary quotation in this office: 02-05-2024 up to 12:00Hrs.**

Please read carefully the terms and conditions given the enquiry quotation form.

S.No.	Description	Qty	Rates	Amount
1.	Supply 80 KVA air cooled ,360-460V, 3 Phase Digitally Micro Controlled Copper Wound Air Cooled Voltage Stabilizer with HLC, Over Load, Short Circuit Protection  (Specifications of 80 KVA AVR to be procured is attached with this form.)	1 no.		
	Total			
	GST @			
	Grand Total			

**Note:**

1. Consignee: Installation officer, Akashvani , HPT DD site Bhuj (Gujarat)
2. Time of execution as per permission of engineer in charge at Akashvani HPT DD site Bhuj (Gujarat)
3. The bidder must be experienced in same kind of scope.
4. Specifications of the item to be procured is attached with this form, filling the budgetary quote specifications should be considered extensively.
5. Supply has to be done as per the terms and conditions in upcoming tender documents.
6. Quantity of Material & Scope may increase or decrease as per actual requirement/constraints at site.
7. Validity: 120days
8. Declaration: We declare that all the conditions as given in the quotation form have been read by us.

Name (in capital) \_\_\_\_\_  
(Seal & Signature of the Bidder)

**SPECIFICATION FOR 80 KVA AUTOMATIC VOLTAGE REGULATOR**

<b>SECTION I (GENERAL)</b>	
<b>1 GENERAL :</b>	
	The unit shall be self-contained, compact, efficient and highly reliable for 100% duty cycle at full load, working round the clock,365 days a year based on field proven design using modern technology. All materials used in the construction shallbe of high quality and as per relevant Indian Standard Specifications. The manufacturer should have ISO 9001/ISO 14001 certificate.
<b>1.1 SCOPE :</b>	
	Supply of indoor ,servo controlled automatic voltage regulator of 415Volts,3 Phase,50 Hz, 80 KVA capacity conforming to the technical specifications in Section II
<b>1.2 SALIENT FEATURES OF AVR :</b>	
1.2.1	Modular construction of control circuitry for easy replaceability.
1.2.2	Control voltage device designed using solid state electronic circuits.
1.2.3	High speed step less correction of output voltage using A.C synchronous motors, without hunting or overshooting.
1.2.4	Independent controls for each of three phases to avoid unbalance in output load voltage in any phase affecting the output of AVR.
1.2.5	Built in overloads and short circuit protection.
1.2.6	Should not introduce waveform distortion.
1.2.7	Front & Rear access for installation and servicing.
1.2.8	Compact in size (One of the best dimension to be restricted to 600 mm)
1.2.9	Full complement of meters, controls, alarms and indicators.
1.2.10	All moving contacts designed to give long and trouble free service life of 15 years.
1.2.11	Rugged construction and field proven design requiring minimum maintenance. MTBF of the equipment to be specified.
1.2.12	Suitable for Continuous use in tropical climatic conditions.
<b>1.3 GENERAL TERMS &amp; CONDITIONS:</b>	
1.3.1	Payment terms, taxes and duties, insurance cover, validity, tender acceptance, initial inspection at manufacturer/tenderer's works, transportation /dispatch of materials, testing of equipment, guarantee terms, delivery period, penalty for delay and other commercial terms would be applicable as per All India Radio (AIR)'s terms and condition on the subject.
1.3.2	The 80 KVA AVR offered shall generally conform to the technical specifications in Section II against each clause. ThePerforma given in Section II against each Clause should be completely filled in while submitting the tender.
1.3.3	The AVR shall be designed for efficient and trouble free service for continuous day & night operation. All materials used in the construction shall be of high quality and conform to the IS specifications No 9815- 1981 amended up to date.
1.3.4	The unit shall be designed for easy maintenance and complete safety to operating personnel.
1.3.5	The tenderer should undertake to make available spares and replacement parts as and when required for the period of ten years.
1.3.6	The equipment offered shall be capable of withstanding rigorous use and rough handling including during transportation.
<b>1.4 COMPLETENESS OF CONTRACT :</b>	
	All fittings and accessories which may not have been specifically mentioned or which the tenderer may not explicitly mention in his tender but are necessary for the operation of the AVR shall be deemed to be included in the contract and be provided by the contractor without any extra charge.
<b>1.5 DOCUMENTS TO BE SUBMITTED WITH TENDER :</b>	
	Sufficient information should be furnished with the tender to enable the full merit of the offer to be assessed. The tender and associated information must be submitted in duplicate and include the following:
1.5.1	Pamphlet with illustrations relevant to the equipment offered.
1.5.2	A schedule of technical particulars shall be furnished by the manufacturer in the proforma as shown in Section II
1.5.3	Supply order copy of last three years.
1.5.4	Copy of ISO certification
1.5.5	Comments on each and every clause of specifications in the order in which they appear in the specifications indicating whether the equipment offered complies with the individual specifications. Wherever necessary, the tenderer shall state whether or not he agrees to the stated conditions.
1.5.6	Descriptive information giving complete details of equipment offered with photographs
1.5.7	A circuit diagram showing the circuit details of the equipment being offered.
1.5.8	A general undertaking to accept the guarantee which will be furnished by the tenderer. Authenticated by OEM
1.5.9	Two complete sets of instructions manuals for operation, maintenance and servicing of equipment for the consignee and two sets are to be sent to the Indenter.
1.5.10	The tenderer should be either the manufacturer of equipment offered or their authorized agent. In case the tenderer is authorized agent, a certificate from the original equipment manufacturer that the tenderer is authorized agent should be enclosed with the tender.
1.5.11	The tenderer shall submit printed technical literatures of the equipment. Incomplete offers will be rejected. The tenderer may be required to demonstrate the functioning clearly specifying all parameter of specification of the tendered unit at the time of technical evaluation, For above demonstration the load etc. will be arranged by the tenderer. Non-compliance of equipment demonstration shall disqualify the tenderer.
1.5.12	<b>DEPARTURE FROM SPECIFICATION :</b> Clause by clause compliance with the specifications shall be indicated. Each and every departure from the specifications shall be specifically brought out in the covering letter of the tender. The tenderer should specify if the departure is due to manufacturing process or any other reason.
<b>1.6 DOCUMENTS TO BE SUBMITTED AFTER ACCEPTANCE OF TENDER</b>	
	Following documents has to be supplied to the consignee along with AVR at the time of delivery.
1.6.1	Six copies of the drawings showing the physical arrangement and dimensions, location of accessories, circuit identification markings, nameplate etc.
1.6.2	Control circuit and schematic including size and capacity of equipment/cables proposed to be used and any other drawing necessary for the job.
1.6.3	Factory test certificates showing the results of the following tests actually conducted on the AVR.

	a) Insulation Resistance Test
	b) No Load Current
	c) No Load Losses Measurement
	d) Output Voltage
	e) Test for continuous operation
	f) High Voltage Test
	g) Induced Voltage Test
	h) Load loss and efficiency measurement
	i) Temperature rise Test
	j) Test for rate of correction
	k) Locked rotor test for servo motor
	l) Leakage current test
<b>1.7</b>	<b>DELIVERY:</b>
	Delivery of the AVR ordered shall be completed within Three months at AIR site. This period shall be effective from the date of acceptance of the tender and shall be independent of any other factors.
	<b>Following documents shall be supplied to the consignee along with equipment at the time of delivery:</b>
<b>1.7.1</b>	Two copies of the book of instructions & drawings regarding installation, testing, operation and maintenance and servicing of the equipment with all the relevant data sheets, spare parts catalogue and workshop procedure for repairs, assemblies and adjustments.
<b>1.7.2</b>	Two copies of Factory test certificates showing the results of the tests actually carried out on the LT switch-gear.
<b>1.8</b>	<b>PACKING:</b>
	The packing shall be suitable to withstand transportation hazards. A copy packing slip giving the list of items included in the package together with the package number shall be mailed in advance to the consignee.
<b>1.9</b>	<b>GURANTEE:</b>
	The equipment will be guaranteed for a minimum period of <b>Three year</b> from the date of receipt at site. The equipment shall be serviced at site free of cost including supply of failed components within the guarantee period. Tender shall mention in his offer minimum period required for making equipment functional. The down time beyond one week shall not be acceptable.
<b>1.10</b>	<b>INSPECTION :</b>
	The successful tenderer will have to get AVR inspected by a person authorized by competent authority at (tenderer's) workshop/factory before dispatch. An acceptance test procedure shall submitted for approval for PDI.

	<b>SECTION II</b>		
	<b>TECHNICAL AND OTHER PARTICULARS TO BE SUPPLIED BY THE TENDERERS AGAINST AIR REQUIREMENTSAS GIVEN BELOW</b>		
	The AVR shall generally conform to all provisions of IS 9815-1981 amended up to date.		
<b>S.NO</b>	<b>PARTICULARS</b>	<b>AIR SPECIFICATIONS</b>	<b>TENDERER'S OFFER WITH EXCACT VALUE WHEREEVER REQUIRED</b>
1.00	Capacity of AVR	80 KVA ( continuous)	
1.1	Input Voltage	320 V to 480 V Three Phase, 50 Hz, 4 wire	
1.2	Output Voltage	415 V +/- 1% adjustable 5% for 3 phase	
1.3	Voltage regulation	plus/minus 1 % from no load to full load	
1.4	Frequency	47- 60 Hz	
1.5	Duty Cycle	Continuous	
1.6	Distortion	AVR should not introduce any output distortion ( to beshown on dual trace CRO )	
1.7	AVR Type	Indoor, free floor standing, servo controlled or any other state of art technology ( sensing and control details to be indicated) with individual phase sensing and control for regulating unbalance incoming voltage and suitable for unbalanced loads. The unbalance in load can be of the order of 50% of rated load. The output voltage stability with this unbalance ( upto 50%) should be within +/- 5% of the Nominal voltage.	
1.8	No load current	Shall not exceed 5% of the rated output current.	
1.9	Overloading	Upto 20 % more rated current for 30 minutes	
1.10	Speed of correction	6 Volt / sec or better	
1.11	Efficiency	Better than 95 %	
1.12	Transformer Winding	Electrolytic prime grade copper	
1.13	Lamination of Transformer & Dimmerstat	M4 Grade - CRGO 0.3 mm thickness Watt loss/Kg 1.2W	
1.14	Insulation level	As per IS amended up to date	
1.15	Insulation Class	As per IS amended up to date	
1.16	Mode of operation	Automatic and Manual mode selection	
1.17	Type of cooling	Naturally Air cooled	
1.18	Electrical protection	AVR shall be protected against over loads, short-circuit surge voltage due to system faults, switching Operations, and hotspot temperature. Complete details of protections(standard as well as optional) are to be Furnished with the tender. MCCB of reputed makes (Siemens/L&T/EE only) are to be provided at the INPUT/OUTPUT.	
1.19	Operating Temperature	AVR shall work satisfactorily under ambient temperature of 0 - 50 deg and relative humidity of 95%	
1.20	Standby /Manual	Facility should also be available to use AVR as a simple manually operated voltage regulator in case of failure of automatic control system. Selector switches for selection of mode of operation (AUTO/MANUAL) and other necessary control switches for this purpose may be provided on the front panel.	
1.21	Metering & indications	i) Digital meters shall be provided with selector switches for measurement of Phase to Phase & Phase to Neutral voltage on all three phases for Input and Output. ii) Digital ammeter in output on all three phases. iii) Indications, on control panel shall be provided for input/output voltage status	
1.22	Main Selector Switch	A four-position heavy-duty switch shall be Provided for the following operations: a) <b>OFF</b> : The input supply is cut off. b) <b>TEST</b> : Input supply is through but output is cut off. c) <b>ON</b> : Input and output both are through. d) <b>BY-PASS</b> : AVR gets isolated and the input gets directly connected to output.	
1.23	Time - Delay switching	An adjustable time delay device shall be provided so that the output is connected to load about 15 to 30 sec ( adjustable) after the input is / switched on/restored after Power Supply failure or momentary interruption during which period the AVR output voltage will stabilize to the desired preset value.	
1.24	a) No load loss(Watts) at 400V & , 50 Hz frequency	To be indicated	
	b) Max. loss(W) at full load current at winding temp. of 75 deg. C and 400 V & also at 340V (Phase to phase input voltage)	To be indicated	

1.25	Approximate weight	To be indicated a) Core & Windings b) Tank fittings and accessories c) Total weight in Kg.	
1.26	Overall Dimensions	: To be indicated a) For AVR b) For Control Panel  c) One of the base dimensions should be restricted to 600 mm.	
1.3	Designation Labels	Suitable designation labels for all control & indicating lamp etc. shall be engraved on the panel and shall be distinctly visible.	
1.28	Connections	Star with insulated neutral.	
1.3	<b>MECHANICAL CONSTRUCTION</b>		
1.3.1	Enclosure	The body of AVR shall be made of MS sheet of minimum 16 SWG thickness capable to withstand transit hazards and to provide mechanical protection to the sensitive parts.	
1.3.2	Outer Finish	First quality paint after the initial primer coat shall be used to prevent rusting, corrosion etc.	
1.3.3	Facility for movement	The AVR has to be provided with sturdy wheels for ease of movement	
1.3.4	Life of roller carbon brush	Minimum 5 years. Roller carbon with minimum wear & tear. Angular Pressure roller carbon brush assembly which should protect the winding from vertical pressure deformation.	
1.3.5	Accessories	All the accessories like earthing terminals, lifting hook, terminal marking plate, diagram plate, rating plate etc are to be provided.	