Madhav Institute of Technology & Science, Gwalior – 474005

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)

Tender cost: Rs.1000/-

4

Dept of Electrical Engineering

TENDER DOCUMENT

For

Industrial Automation Lab

(2020-2021)

Madhav Institute of Technology & Science, Gwalior – 474005

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#Validity of rates must be for minimum 8 months.
#Warranty period 12 Months (free of cost).
#Performance security 10% will be deducted at the time of payment, with will be released at the end of warranty period on successful working of the equipments.
#Supply will be done within 30 days from the date of order.
#In case of unjustified delay, liquidity damages will be deducted @0.01% per day.
#Tender cost is Rs.1000/- which is to be deposited along with tender in the form of DD in favor of the Director, MITS Gwalior

Vendor must give offer for all items in the package. Partial offers will be rejected.
The evaluation/award of contract will be done on the basis of total package cost (not on the basis of individual items).

1. Quotation,
   1.1 The contract shall be for the full quantity as described in the tender.
   1.2 Corrections, if any, shall be made by crossing out, initialing, dating and re-writing.
   1.3 All duties and other levies payable by the supplier under the contract shall be included in the unit price.
   1.4 Applicable taxes shall be quoted separately for all items.
   1.5 The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
   1.6 The Prices should be quoted in Indian Rupees only.
2. Each bidder shall submit only one quotation.
3. Evaluation of Quotations,
   The Purchaser will evaluate and compare the quotations determined to be substantially responsive i.e. which
   3.1 are properly signed and
   3.2 Confirm to the terms and conditions, and specifications.
4. The Quotations would be evaluated for all items together.
5. Award of contract:
   The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price.
   5.1 Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of contract.
   5.2 The bidder whose bid is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be incorporated in the purchase order.
6. Payment shall be made in Indian Rupees as follows:
   Delivery, Installation, training and Satisfactory Acceptance - 90% of total cost.
   The performance security (10% of basic cost of order value) will have to be deducted from the payable amount and will be return at the end of warranty period on successful working of the equipment.
7. You are requested to provide your offer latest by **14:00** hours on **25/07/2020. The Technical bid of offers will be opened at 14:30PM on 25/07/2020. The commercial offer of technically eligible bidders will be opened at 15:00PM on 25/07/2020**
8. All supplied items are under warranty of 12 months or higher with support and maintenance (free of cost) from the date of successful acceptance of items.
9. Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly indicating the model quoted for.

10. The Vendors must enclose OEM certificate/authorized channel partner /authorized distributor/authorized dealer.
11. The vendor must submit the GST certificate and ITR of last three years.
12. Vendor must produce a certificate with his seal and sign on his letter head that he accept all the terms and condition in the invitation letter.
13. If items are not supplied within time line, paneling may be imposed on the supplier.
14. Training Clause: Seller has to arrange the training with course material(if required) at MITS, Gwalior without any extra payment
15. Testing/Installation Clause: Seller has to installed the equipments successfully at MITS, Gwalior without any extra payment
16. Sealed quotation to be submitted/ delivered at the address mentioned below,
    Director, Madhav Institute of Technology & Science,
    Gola Ka Mandir, Residency Road Gwalior-474005(M.P) India
17. **Please Mention the following things on the top of the envelop**
    i. **Package Name**
    ii. **Last date of Submission**

18. The outer sealed envelope must specify the **PACKAGE NAME.** There must be two sealed envelope inside it. The first sealed envelope must be marked as **ENVELOPE – 1.** It must contain following documents:

- GST certificate
- ITR of last three years
- OEM certificate/authorized channel partner /authorized distributor/authorized dealer certificate
- Product catalogue
- Work experience in the same domain if any
- **EMD (Rs20,000) in the form of DD in favour of the Director, MITS Gwalior.**

The second sealed envelope must **only contain the financial bid** (marked as **ENVELOPE – 2).** The second envelope will only be opened when the committee finds the offer as technically suitable as per our terms and conditions.

19. The Institute reserve the right to cancel the tender without any notice.

DIRECTOR

It is certified that, the …… (Firm name), agree all the terms and conditions of the tender. We know that in case of any deviation from the terms and conditions our offer will be cancelled.

Vendor Name, Seal and Sign with Date

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INVITATION FOR QUOTATION

Name of the Department: Electrical Engineering
Name of the Project/Package: Industrial Automation Lab

S N	Item name*	Qty	Make	Model	Unit Rate without GST	Total Cost without GST	GST %	Total Cost with GST
01	Industrial PLC Trainer	02						
02	Rotary Transfer Unit	01						
03	Conveyor Belt	01						
04	Lift Elevator	01						
05	Water Level Control	01						
06	SCADA Software	01						
							GRAND TOTAL WITHOUT GST	
							GRAND TOTAL WITH GST	

Price must be inclusive of supply, installation, commissioning and training.

Detailed specifications are attached.

It is certified that, the …… (Firm name), agree all the terms and conditions of the tender. We know that in case of any deviation from the terms and conditions will cancel our offer.

Vendor Seal and Sign with Date

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Name of the Department: Electrical Engineering Lab

Name of the Project/Package: Industrial Automation Lab

Detail Specification

S.No.	Item Name	Detailed Specifications
01	Industrial PLC Trainer	Technical Specifications • Rack based table top model: Using Aluminum profile rack of 4 x 2 matrix. • Table Top Model: Electronic desk with ergonomically designed ABS Moulded enclosure with slick looking replaceable experiment panel in central slot. • Can learn about different aspects of application trainers like Industrial PLC, SCADA, DCS etc. using simulated building blocks /replaceable static application panels (SAPs), Optional S/Ws. • Analog I/O channel with potentiometer for AI simulation • Connection through sturdy 4mm Banana sockets & Patch cords • Students workbook & Instructor's Guide provided with each unit • Option of mechanical setups like floor Elevator, conveyor belt, Rotary transfer unit, water level control etc. o Table (1220 (L) x 610 (W), 760 H) consisting of fine veneer top, MS tubular frame, 2 drawers with key lock, 1 PC keyboard drawer, writing pad drawer, 4 castor wheels etc. SCADA S/W development suit on CD with USB hard ware lock o CPU (DIO): Model I: S7-1200- CPU1214C (Default) Model II: S7-300-CPU 313C o DIO: 14 DI + 10 DO (8DI + 8DO or 16DI + 16DO Optional for lift) Digital inputs 24 V DC (current sinking Digital outputs: either 24VDC transistorized or relay@ 0.1A. o AIO (Optional): 2AI (built in) + 1AO (Optional) 4AI + 2AOInput range-0 to +10V, Resolution- 10 bit o Software: STEP 7 Basic programming package o COM Ports: Ethernet Port (RJ45) for Ladder Programming, Rs485 (Optional) for HMI if ordered o Converter cum Distribution Panel/CDP: Converts screw driver terminal strip of PLC into 4mm sockets total 64 No. Maximum m 24 for Digital Inputs, 16 for Digital Outputs, 2 for Analog I/O & 16 for +24V Supply & GND. Facilitates easy replacement /maintenance / wiring. o Simulation cum Extension Panel (SEP/DI): 8 No. of Digital Input. (4 toggle switches + 4 push buttons) No. of 4mm banana sockets =36 o Simulation cum Extension Panel (SEP/DO): Combined 8 Led indicator +Relay Panel / Relay 24V and contact rating of 230VAC / 1A (Resistive). No. of 4mm banana sockets =44. Shrouded sockets for relay contact =8 Nos.

		○ Simulation cum Extension Panel (SEP /AIO): 6 No. of Potentiometer to simulate inputs to AI.2 No. of Analog outputs terminated on banana sockets. No. of 4mm banana sockets =18 ○ Operating voltage: A Separate SMPS power supply panel ○ SMPS I/P: 110/20/230Vac + 10% 50/60 Hz, O/P: 24V / 2 A ○ AC O/P: 2 x 3 pairs of shrouded banana sockets for 230V O/P with switch & fuse protection for other use. ○ 37 Pin D Connector (f): Provided 37 pin D type connector for complex working models like lift elevator to save on wiring time. It supports DI= 21, DO=13, +24V= 1, GND=2 ○ Static Application Panel SAPs (Select 1 or more) (Note: * marked SAPS need AI channels of PLC): Common Base Board consisting of 54 LEDs, with 10 LEDs for Bar Graph for AO. RTD signal conditioning circuit (optional) for temperature sensor. No. of 4mm banana sockets =32 Replaceable 19 Nos. of Static Application Panel which may be inserted onto common baseboard panel with selectively LEDs exposed :- 1) Door Bell Operation, 2) Switching of lights, 3) Silo Control, 4) Seven Segment Display, 5) Starter Control, 6) Sequential Control of Motors, 7) Star Delta Control, 8) Resistance Welding, 9) Tank Level Control*, 10) Traffic Light Control, 11) Bottling Plant*, 12) Drink Dispenses, 13) Reaction Vessel*,14) Oven*, 15) Parking Garage, 16) Combination Lock, 17) Elevator Simulator, 18) Process Control Trainer *, 19) Washing Machine Stepper motor panel P25 (Optional): 12VDC, Step 7.50 stepper motor, Dir. & speed control. ○ Mechanical Dimensions: 960 (L) x 300 (W) x 545 (H) mm. Net Wt. 23 Kg, Gross Wt.: 33KgAccessories: Mains cord, Ethernet cable1.5m, Patch cords red & black 600mm length 15nos. each
02	Rotary Transfer Unit	Table Top Unit of size (365 mm[L]x320mm [W] x 200mm [H]). Need DI = 12, DO= 8. Consists of two geared bi-directional DC motor (3V) namely a) Turn table with 8 pegs driven by seared motor with numbers (Optional) of IR emitter detector pairs to signal turn table position to controller & need 2 O/P from controller to select FWD/REV rotation. b) Dispensing motor to drop onto 8 pegs on turn table rings loaded in two holding tubes holders, needs 2 O/Ps @24VDC from controller to dispense ring from either of the holding tube. 8 fault switches, connects to controller using 4 mm sockets x 11nos., Auto / Manual operation, Supply 220 /230VAC, 50Hz.
03	Conveyor Belt	Table Top Unit of size (560mm x 680mm x 170mm) using 30×30 aluminium profile stand with level adjustment need DI=2, DO=4. Light weight table mounted conveyor with of PVC belt of 1.2m length, Rollers, 230VAC geared motor, 3 No. of spring return double acting cylinders, 1 no. of defused reflective sensors & one No. of inductive proximity sensor to detect presence,& height of transported metal objects (cylinders), 3 beans to segregate these cylinders, as per their physical property. Need Air Compressor 3 cfm, Working pressure: 7 bar with Motor 1Ph./0.5 HP/1440 rpm.

04	Lift Elevator	Needs DIs = 21 and DO's = 13 numbers, Table top model of 4 floor elevator with colourful floor overlay and 3 sides covered in transparent perplex sheets for easy viewing. Size:1100(H) X 250(W) X 380(D) mm with motor 230VAC/100W with speed reduction gear box (30RPM), total 36 LED indications, 32 switches, 4 limit switches. Each floor has front panel consisting of motorized sliding door with limit switch to indicate door closed position, door open audio and LED indication/illumination, auto/manual door closing/opening with end limit switches, 2 numbers of door close/open push buttons for manual operation, 1 number of DPDT switch to select door opening from PLC or manual, "man in door" photo/IR sensor feedback to PLC for software interlock, four numbers of floor selection entry buttons inside the lift with key impulse indicators, two numbers of up/down call floor request button outside the lift & LEDs for up/down movement indication of lift, 1 floor sensing limit switch with floor indication/ illumination LED, 7-segment display to indicate floor position on each floor, 37-pin D connector cable [1.5m] to connect with PLC & top floor panel and 3 numbers 37-pin D patch cables for inter floor connections obviating any need for tedious wiring between PLC & elevator
05	Water Level Control	Water Level Control using Float type sensor, 500 mm calibrated acrylic water tank, water pump, manual flow valve mounted on compact light weight (530 x 910 mm) table top panel. SCADA software development suite supplied on installable CD. Supports 25 tags, with USB hardware lock provided, 19 projects for 19 SAPs P4/XP needed but PC not in scope of supply. Interfaces with PLC through RS232C comport. Compatible with Item-1
06	SCADA Software	SCADA software development suite supplied on installable CD. Supports 25 tags, with USB hardware lock provided, 19 projects for 19 SAPs P4/XP needed but PC not in scope of supply. Interfaces with PLC through RS232C comport.

It is certified that, the …… (Firm name), the technical specifications are exactly specified in the tender. We know that in case of any deviation, our offer will be cancelled at any stage.

Vendor Seal and Sign with Date