



GOVERNMENT POLYTECHNIC COLLEGE, PALA

Kanattupara, Pala.P.O, Kottayam District – 686575

Phone:04822200802 Email:gptcpala@yahoo.com

Website:www.gptcpala.org

No.D1/630/2024

Dated: 04.05.2024

TENDER NOTICE

e-Tenders are invited for the supply of equipment for the automation & process control lab in the Instrumentation Engineering Department of this institution as per the details attached for Government Polytechnic College, Pala at a total cost of **Rs. 4,52,500/-**.

Details

- | | |
|--------------------------------------|----------------------------------|
| 1. Tender No. | : 01/2024-25 |
| 2. Document Download/Sale start date | : 07.05. 2024 ,11.45 AM |
| 3. Bid submission start date | : 07.05. 2024 ,04.00 PM |
| 4. Bid submission closing date | : 30.05. 2024 ,04.00 PM |
| 5. Bid opening date | : 01.06. 2024 ,11.00 AM |
| 6. Cost of Tender Form | : Rs.905 + 163 = Rs. 1,068 |
| 7. EMD | : 1% of the Total Estimate Value |

More details can be obtained from the Office on working time



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Principal
Govt. Polytechnic College
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Terms and Conditions

- 1) Follows General conditions (Enclosed in first cover)
- 2) Item Supply within 30 days
- 3) No advance payment
- 4) Submit agreement for Rs.220/- and SD before Supply Order.
- 5) The items ordered must be delivered at Government Polytechnic College, Pala
- 6) If items or any part thereof fails to comply with the requirements the supplier will repair or replace the same to the satisfaction of college within such time as may be specified by college. The Supplier shall bear all costs including freight charges, cost of testing and examining, replacing defective items without prejudice to any other claims.
- 7) The supplier guarantees that all items supplied will be of the highest quality, fit for the purpose for which they are intended and free from defects arising out of faulty design, faulty and inferior parts, materials, workmanship, poor service reliability or any other causes, and shall comply with each and every requirement of college.
- 8) The supplier further agrees not to:
 1. Make claims or assist any third party in any claim to the Intellectual Property Rights.
 2. Do or permit any act to be done which is likely to prejudice any rights of college and to the Intellectual Property Rights.
 3. Do or permit to be done any act or thing which is likely to jeopardize or Invalidate any rights of New Aviation in and to the Intellectual Property rights.



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Sl. No	Details of items with specification	Quantity of items now required
1	<p>Programmable Logic Controller Trainer with Demonstration Panel:</p> <p>CE approved UL listed PLC with the following specifications. Power Supply Voltage 24V DC, Work memory : 100 Kbytes, Load memory : 4 Mbytes, User memory Retentive : 10 Kbytes Timers -256nos, Local on-board 8 Digital Inputs 24V DC ,Local on-board 6 Digital Outputs 24V DC transistor, I/O expandable type PLC, 2 Analog input 0-10V DC, Process image Inputs : 1024 bytes, size Outputs (Q) 1024 bytes, Bit memory (M) 8192 bytes, High speed counter 6nos(100khz, 30khz) Pwm output -1nos, Communication : Ethernet integrated with profinet Electrical Control panel & frame ,MS Powder coated panel with industrial grade Switches, acrylic front, Led indicators for digital outputs, Test Points, 4mm Banana pins, analog source for analog input. Digital analog I/O interface option for simulator via banana Connectors and wires PLC, mounted on, DIN rail channel, multi strand wire with proper insulated, lugs, ferruling & neat wire, dressing & clamping with SMPS, for programming windows based software for configuration. The setup must be ready to do the experiments. Experiment Manuals and documents must be provided. All products must be ISO certified, in specification clearly mention brand name, model, and product selection code of each and every components.</p>	3
2	<p>PLC based real time application Module - Water Level Control - It consists of a process tank fitted with level sensors, prototype reservoir tank with pump . Transparent water tank, level switches , drain valve etc The trainer shall be compatible with the PLC given in ITEM no 1</p>	1
3	<p>PLC based real time application Module - Lift Control system - 3 floors (minimum) lift control, All required accessories to study lift control by PLC, The trainer shall be compatible with the PLC given in ITEM no 1</p>	1



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4	PLC based real time application Module - DOL Starter - It consists of Contactors, Relay, Connectors, Indicators etc. The trainer shall be compatible with the PLC given in ITEM no 1	1
5	PLC based real time application Module - Traffic Light Control - It consists of a Traffic Light System represented in a panel with different Color LEDs. Each Road traffic conjunction is sensed. The trainer shall be compatible with the PLC given in ITEM no 1	1
6	PLC based real time application Module - Temperature Controller - It consists of all necessary components to establish a closed loop speed control of temperature process. PLC acts as ON/OFF . Water bath with heater, temperature sensor with the signal conditioner, Temperature Indicator etc. The trainer shall be compatible with the PLC given in ITEM no 1	1
7	PLC based real time application Module - DC Motor Speed control - PLC trainer for DC motor speed control with all necessary components like PMDC motor , Optocoupler sensor, PWM amplifier etc. The trainer shall be compatible with the PLC given in ITEM no 1	1
8	Level Process Controller setup consist of A circulating water plant or circulating water system including pump and nessary valves including bypass valve, one measuring tank of min 1000mm height 15ltr capacity.Level of tank controlled by a PID controller and a control valve.The level port of tank connected to differential pressure transmitter. The setup must include the following: 1.measuring tank of 1000mm height, min of 10 ltr capacity and sump tank min of 40 ltr capacity.all tank made of SS304 and finished with mat steel finish.sight	1



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glass and level scale required for measuring tanks.

2. pump must be 0.5hp,SS centrifugal pump,minimum 1 inch pipe line of SS or high pressure withstanding plastic with plastic welding.
2. Smart DP transmitter with HART protocol,display and keys integrated for calibration,0-1000mmh₂o measurement range,0.01% accuracy,international ISO certified CE approved make,24v supply,4-20ma output,loop powered
3. Seperate process indicators for I to P and level transmitter to display valve i to p current and level,process indicator with 4 digit with 0.1 MSD
One Linear characteristics diaphragm operated control valve with 15mm stroke 1/2 inch size with 3-15psi diaphragm pressure with flow of 2000l.PH.
3. Advanced PID controller with PV display,analog 4-20Ma input and output,with communication option can be operated using LABVIEW & MATLAB developed programs.Also required standalone software with trend graph of process value and setvalue for control and monitor the level loop.software must be compatible with windows operating system.
4. 24V DC power source, with necessary protection and Industrial Panel.
5. I to P converter with 4-20ma input and 3-15psi output to control the tank pressure.
6. Rotameter 1 inch size Flow : 200-2000 L/h,SS thread,clear acrylic type.
7. The whole system setup must be in MS powder coated standalone mobile table with lockable castor wheels.All the components used be industrial.copper tubing for air connection,electrical wiring connection to be flexible for to connect field devices.panel with Switches,indicator, Test Points with banana connectors as required,Multi strand wire with proper insulated lugs, ferruling & neat wire dressing & clamping.
8. The setup must be ready to do the experiments.Experiment Manuals and documents must be provided.All products must be ISO certified,,in specification clearly mention brand name,model,and product selection code of each and every components.



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