

This file has been cleaned of potential threats.

To view the reconstructed contents, please SCROLL DOWN to next page.



प्लाज़्मा अनुसंधान संस्थान
INSTITUTE FOR PLASMA RESEARCH
परमाणु ऊर्जा विभाग, भारत सरकार का एक सहायता



प्राप्त संस्थान
An Aided Institute of Department of Atomic Energy,
Government of India

इन्दिरा पुल के पास, भाट, गांधीनगर - 382 428 भारत
दूरभाष: (079) 2396 2020/2021/2028
फैक्स: 91-079-23962277
वेब: www.ipr.res.in

NEAR INDIRA BRIDGE, BHAT
DIST. GANDHINAGAR - 382 428 (INDIA)
Phone: (079) 2396 2020/2021/2028
Fax : 91-079-23962277
Web : www.ipr.res.in

ENQUIRY

ENQUIRY NO : IPR/EQL/19-20/154
Date : 19-07-2019

Due on : 08-08-2019 by 1:00 PM IST

Please send your offer in sealed envelope specifying Enquiry No, Date & Due Date, ALONG WITH your credentials for the following items:

Important Note:

Please note that e-mail quotations are not acceptable however you may send your queries (if any) to localpurchase@ipr.res.in

Please ensure your sealed quotation reaches this office not later than above mentioned due date and time.

Kindly go through the following documents properly before quoting which are available on the IPR web portal i.e., http://www.ipr.res.in/documents/tender_terms.html / attached herewith.

- 1) Instructions to the bidders & Terms and conditions (refer Form No: **IPR-LP-01.V4**)
- 2) Bidding format

GST for Goods and Services (IGST/CGST/SGST TAX BENEFITS): Please refer **clause no: 8** of Form No: **IPR-LP-01.V4**

QUOTATION SHOULD BE ADDRESSED TO PURCHASE OFFICER ONLY

Sr No	Description	Quantity
1	Supply of Programmable Logic Controller with 64 digital inputs/ 64 digital outputs with 24VDC control power supply, integrated communication port (USB, Ethernet TCP/ IP, Canopen), computer programmable conforming to IEC 61131 and as per detailed specification enclosed herewith.	1.0 Unit

2	Software development charges: programming (as per logic given by IPR) & documentation	1.0 Job
3	Installation, wiring (connecting inputs/ outputs), testing & commissioning of Programmable Logic Controller	1.0 Job

Note: 1. Delivery Time : 4 To 6 Weeks
2. TDS as per CGST Act: As per provisions of section No. 51 of the CGST Act 2017, TDS @2% (IGST 2% or CGST 1% and SGST 1%) will be deducted while making payment to the suppliers where total value of orders/contracts/work orders exceeds Rs. 2.5 lakhs, in the event of order in Indian Rupees. Necessary TDS Certificate will be issued to the supplier after TDS deduction.

Encl: As Per Attachment

Sd/-

Mr. D. Ramesh
Purchase Officer-II

Information to Vendors: We are working towards a single platform for our future requirement. Hence, please refer IPR website i.e, <http://www.ipr.res.in/documents/tenderseng.html> for our future requirement.

FUNCTIONAL REQUIREMENTS

Control System

The open architecture control system should be based on open industry standards rather than proprietary.

The controller sub system must be microprocessor based and 32-bit ARM processor. It must be capable to execute multiple loops at configurable scan times.

The processor must be battery free using flash technology with built in SD card. The control system must be capable to operate between 0 to 60 Deg Celsius. The control system must be able to withstand Mechanical shocks up to 30g, Vibrations up to 3g, Electrical immunity radiated field up to 15V/m and Electrostatic discharges up to 8KV.

Controller capabilities

The controller shall be capable of performing the following functions:

- Data acquisition from I/O modules.
- Regulatory PID control with different types (both direct & reverse acting type), Auto <--> manual bumpless transfer, Manual output ramp.
- Must support Hot Swapping for all the Input / Output modules.
- Ratio control
- Logic functions
- In built timers and counters for handling process and batch interlocks
- Square-root extraction
- Forcing of input and output status of Digital I/O
- Totalizer function
- Mathematical and Trigonometric functions
- The controller must have diagnostic onboard status for run, stop, communication, memory health, CPU error, IO err indication.
- The application memory shall be at least 2MB and shall be expandable to 128MB for storing the process events, recipes, data logging etc.

All the above control functions shall be available in the form of function blocks and it shall be easily configurable by the user.

INPUT-OUTPUT SYSTEM

The system shall support the following type of input and output signals.

Digital Input

- 16/32/64 input channels per module
- Shall be rack based and hot swappable
- Input interrogation voltage shall be 24VDC
- LED indication to indicate status of field signals, card healthiness and communication healthiness shall be provided.
- All cards shall be compatible of receiving digital inputs directly
- Field inputs shall be through interposing relays
- Isolation level of DI with internal circuits shall be preferably 1.5KV A.C / 500V DC
- Reverse polarity protection shall be provided
- Insulation resistance should be > 10Mohms

Digital Output

- 16/32/64 output channels per module.
- Shall be rack based and hot swappable
- Output interrogation voltage shall be 24VDC
- Each digital output shall be either provided with an integrated relay output or with duly wired relay boards rated for 5A/230V
- The modules shall be individually protected against continuous over-current and short circuit
- The module shall be capable of verifying the state of each output
- Insulation resistance shall be > 10Mohms
- Fall back state of the channel shall be configurable.

Each Output card consists the onboard relay output and suitable connector for the same. I/O cards shall have built in galvanic / optical isolation for input and output. The Isolation shall be provided between each of the channels or groups in I/O rack.

Communication

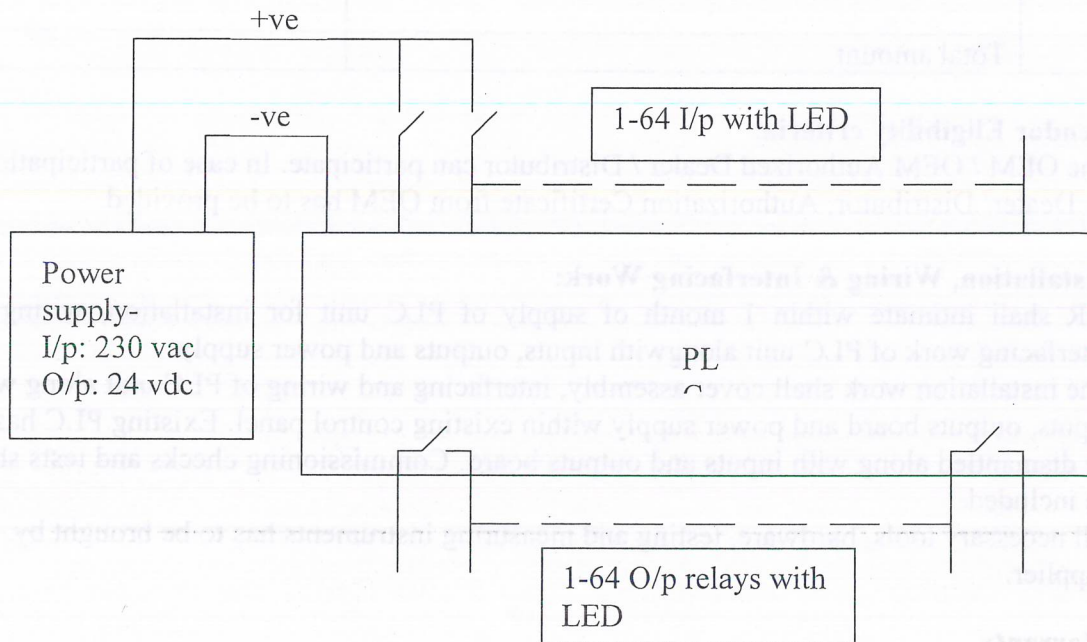
The control system shall be an open architecture with standard TCP/IP communication protocol conforming IEEE 802.2. It shall support 3rd party equipment integration possible on Modbus TCP, Can Open, Modbus serial, Ethernet IP devices. System network speed must be min 100Mbps.

Engineering Software

Programming software-licensed version should be used. USB cable for programming the PLC should be provided. Automatic software reconfiguration by the CPU should be possible. Programming software shall be latest, window based, menu driven. It shall support IEC 61131-3 standards Programming languages like FBD, IL, SFC, ST, LD supported in online / offline mode. On line and off line Simulation shall be possible. I/O forcing shall be possible from the programming terminal. The software should involve the possibility of changing variables, logic without stopping the controller i.e. should support online editing. The software shall support the user defined function block for similar logics and shall be possible to call the instances in the main program section.

Logic flow chart shall be given by IPR to develop the program.

PLC shall have built-in CPU, logic cards, memory, 24VDC power supply. Diagram is shown below depicting PLC, powers supply and inputs & outputs for reference.



PRICE SCHEDULE		
Sr. No.	Item description	Price in INR exclusive of taxes, duties & charges
1)	Supply of PLC as per enclosed specification.	
2)	Software development (logic flow chart shall be given by IPR to develop the program).	
3)	Installing, wiring/ connecting the inputs & outputs, testing & commissioning at IPR Control Panel.	
	Total amount	

Vendor Eligibility criteria:

The OEM / OEM Authorized Dealer / Distributor can participate. In case of participation by Dealer/ Distributor, Authorization Certificate from OEM has to be provided.

Installation, Wiring & Interfacing Work:

IPR shall intimate within 1 month of supply of PLC unit for installation, wiring & interfacing work of PLC unit alongwith inputs, outputs and power supply.

The installation work shall cover assembly, interfacing and wiring of PLC unit along with inputs, outputs board and power supply within existing control panel. Existing PLC has to be dismantled along with inputs and outputs board. Commissioning checks and tests shall be included.

All necessary tools, hardware, testing and measuring instruments has to be brought by supplier.

Warranty

Vendor shall warranty design, materials/workmanship and performance for a period of twelve (12) months from the date of commissioning/ eighteen (18) months from the date of supply.

Deviation

Deviation from specification must be stated in writing at the quotation stage.

In the absence of such a statement, it will be assumed that the requirements of specification are met without any deviation.

Technical Datasheet *(to be filled by supplier)*

S/N	IPR Specifications	Supplier Confirmation/ Remarks
1	Controller must be microprocessor based and 32-bit ARM processor	
2	Processor must be battery free using flash technology with built in SD card	
3	Controller must be capable to operate between 0 to 60 Deg Celsius	
4	The controller must have diagnostic onboard status for run, stop, communication, memory health, CPU error, IO err indication	
5	The application memory shall be at least 2MB and shall be expandable to 128MB for storing the process events, recipes, data logging etc.	
6	16/32/64 input/ output channels per module	
7	I/O Shall be rack based and hot swappable	
8	LED indication to indicate status of field signals, card healthiness and communication healthiness shall be provided.	
9	Input cards shall be compatible of receiving digital inputs directly	
10	Input interrogation voltage shall be 24VDC.	
11	Input module reverse polarity protection shall be provided	
12	Output interrogation voltage shall be 24VDC	
13	Each digital output shall be either provided with an integrated relay output or with duly wired relay boards rated for 5A/230V	
14	Output modules shall be individually protected against continuous over-current and short circuit	
15	I/O cards shall have built in galvanic / optical isolation for input and output.	
16	The control system shall be an open architecture with standard TCP/IP communication protocol	
17	Programming software shall be latest, window based, menu driven. It shall support IEC 61131-3 standards	
18	Programming languages like FBD, IL, SFC, ST, LD supported in online / offline mode.	
19	Scope of work: Installation, assembly, wiring of inputs and outputs, 230 vac / 24vdc power supply and programming as per logic provided by IPR included	

