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प्लाज़मा 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 प्ल 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 : I

: IPR/EQL/18-19/457

Date

: 06-03-2019

Due on

: 23-05-2019 by 1:00 PM IST

Reminder-1 Dt: 08-04-2019 Reminder-2 Dt: 26-04-2019

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	Stepper motor System as per attached specification sheet	1.0 Nos.

Note: Note: (1) Unsigned quotations are not acceptable.

Quotation should be submitted duly signed on ALL PAGES

invariably

(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

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.

Technical specification for stepper motor system

A. <u>Hardware</u>

1. HMI

Sr.no.	Parameter	Specifications
a.	Туре	Touch panel screen
b.	Display	Colour
С.	Size	≥ 7 inch
d.	Supply voltage	≥ 24v DC
e.	Resolution	≥ 800 X 480 pixel

2. Communication cable (HMI to Control system)

Sr.no. a.	Parameter Cable Type	Specifications Ethernet cable, CAT5 cable or best
b.	Shielding	Outer
C.	Cable length	50mtr again against

3. Control system (PLC)

A.	CPU	e i Lisolattion (Stell Store and 1991) supplied in
Sr.no.	Parameter	Specifications
a.	User memory	≥ 12 KB program memory, ≥ 8 KB data memory
b.	On board digital I/O	12 input points, 8 output points
C.	I/O module extension	6 extension modules
d.	Memory	Micro SDHC card
Al Jim	Communications	o Fredrights arangement
Sr.no.	Parameter	Specifications
a.	Communication port required	1 Ethernet port
b.	Data transmission rate	Ethernet: 10/100 Mb/s
C.	Power source	Same Personal Same Same Same Same Same Same Same Same
Sr.no.	Parameter	Specifications
a.	Input voltage	Specifications 230V AC, 50Hz
b.	Output	24V, ≥ 5A

С.	Protection	Overload, short circuit, over voltage.
D.	Digital input Modules	
Sr.no.	Parameter	Specifications
a.	Number of input points	14
b.	Rated voltage	≥ 24V DC,≥ 4 mA,
C.	Logic 1 signal (min)	15 V DC
d.	Logic 0 signal (min)	5 V DC
e.	Isolation (field side and logic side)	Minimum 500 V AC for 1 min
E.	Digital output Modules	2. Communication cable (HMI to Control
Sr.no.	Parameter	Specifications
a.	Number of output	10
b.	Type	Relay
C.	Voltage range	5 ~ 30 V DC
d.	Rated current at each point (max)	≥ 2.0 A (2.14) materia formo 3 .8.
е.	Isolation (field side and logic side)	Minimum 1000 V AC, for 1 min
f.	Isolation resistance	Minimum 100 MΩ
g.	Switching delay	Max. 10 ms
F.	Enclosure / Panel Box	b On house digital I/O
Sr.no.	Parameter	Specifications management of the second control of the second cont
a.	Material	MS / Aluminium with colour coating
b.	Mounting arrangement	Wall mount
C.	Enclosedunits	Control Unitwhich consist PLC, Driver unit, I/C modules, Power supply etc. (Refer block diagram No. 3)

Sr.no.	Parameter	Specifications
a.		≥ 24VDC
	Input voltage	
b.	recifications	≥ 13.55 N-cm
	Torque	b. Input voltage 22
C.	Direction	Both (forward -reverse)
	1 12 5 3	b. Ougat

d.	Encoder	Yes
e.	Decoder	Yes
f.	Input and signal Cable length	At least 25 meter (For Input supply cable)
g.	Quantity	At least 25 meter (For signal cable) 2 Nos.
5.	Stenner Motor Driver	

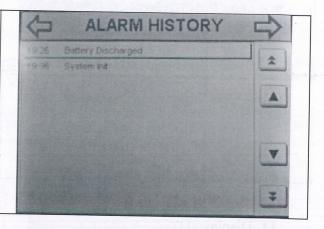
5. Stepper Motor Driver

Sr.no.	Parameter	Specifications
a.	Line supply	230 ± 10% V, 50Hz
b.	Motor Control voltage	≥ 24 VDC
C.	Maximum current (A)	≥ 4A
d.	Protection	Earth fault protection, output short-circuit protection, overvoltage
e.	Degree of protection	IP 20
f.	Digital inputs/outputs	10inputs - NPN/PNP; 6outputs - NPN
g.	Analog outputs	2 Analog outputs, output voltage range +/- 10V
h.	Communication	USB/Modbus
i.	Speed control input	External Analog input or internal set point
j.	Torque control input	External Analog input or internal set point

B. CONNECTION BLOCK DIAGRAM

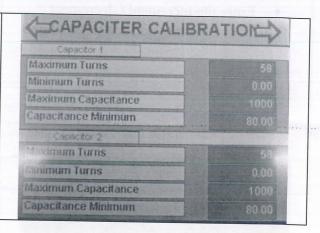
13. Display -13

- View the alarm history
- View in all error, like battery discharge, system initialization interlock, and overload trip.



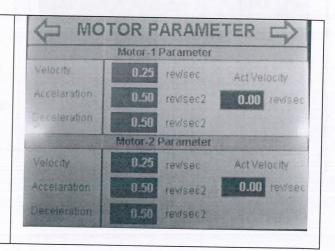
14. Display -14

- This display is used for the capacitor calibration function
- Admin password is required for data set/change
- Maximum and minimum value of capacitor and turns for both capacitor C1 and C2 will be entered as Clause B.11



15. Display -15

- This display is used for motor motor parameter settings
- Admin password is required for data set/change
- Following data set points for both the motors can be changed:
 - Velocity (rev/sec),
 Acceleration (rev/sec2),
 Deceleration (rev/sec2),
 Actual velocity (rev/sec),



E. Scope of work for Bidder

- 1. Design, Supply, programming, integration, testing and operation of stepper motor system.
- 2. Operation and maintenance manual including datasheets / test report / test certificates of important components.
- 3. Backup of final version of software in CD / USB drive
- 4. On site demonstration of operation, maintenance and software backup / upgrade to IPR personnel

F. Important instructions to bidders:

- 1. Party should quote for all the material / components mentioned in this document. Partial quotation will not be considered.
- 2. Bidder may visit the site before submitting the quotation for any technical clarification, if necessary.

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Operation and maintenance manual including date, heart report / real certificates

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 On site demonstration of operation, materierance and software backup / apgrade to IPR necessaries.

E. Impreciant instructions to bidders:

Party should quote for all the material / components (semioned to this decrement,

Ridder may visit the site before submitting the quotationfor any rationical classification if necessary.

Compliance Form

1. HMI

Sr.no.	Parameter	IPR Specifications	Vendor's Specifications
a.	Type	Touch panel screen	
b.	Display	Colour	of log rugin to volume political to
C.	Size	≥ 7 inch	egenov baneff - d
d.	Supply voltage	≥ 24v DC	c Logic Vsignel (min)
e.	Resolution	≥ 800 X 480 pixel	d. Logic 0 signal (min

2. Communication cable

Sr.no.	Parameter	IPR Specifications	Vendor's Specifications
a.	Cable Type	Ethernet cable, CAT5 cable or best	Stand. Parameter
b.	Shielding	Outer	a. Number of curput
c.	Cable length	50mtr	t. Lype

3. Control system (PLC)

i.	CPU	nd Minimum 1000 V DC for	e. Isoladon (field sice at loute side)
Sr.no.	Parameter	IPR Specifications	Vendor's Specifications
a.	User memory	≥ 12 KB program memory, ≥ 8 KB data memory	g. Switching delay
b.	On board digital I/O	12 input points, 8 output points	vi. Enclosure / Panel Box
C.	I/O module extension	6 extension modules	cano. Parsaneter
d.	Memory	Micro SDHC card	leineitel in
		colour coading	
ii.	Communication	colour coating in Wail mount	b. Mounting arrangemen
ii. Sr.no.	Communication Parameter	IPR Specifications	Vendor's Specifications
		IPR Specifications 1 Ethernet port	Vendor's Specifications
Sr.no.	Parameter Communication port		Vendor's Specifications
Sr.no. a. b.	Parameter Communication port required	1 Ethernet port	Vendor's Specifications
Sr.no. a. b.	Parameter Communication port required Data transmission rate	1 Ethernet port	Vendor's Specifications Vendor's Specifications

b.	Output	24V, ≥ 5A	* * *
С.	Protection	Overload, short circuit, over voltage.	
iv.	Digital input Modules	fourth panel screen	ospy ^T .s
Sr.no.	Parameter	IPR Specifications	Vendor's Specifications
a.	Number of input points	14	The second secon
b.	Rated voltage	≥ 24V DC, ≥ 4 mA,	araninga mana sa 1888 sa 1885 sa 1886
c.	Logic 1 signal (min)	15 V DC	egodov ylqque b
d.	Logic 0 signal (min)	5 V DC	BOUNDOEST
e.	Isolation (field side and logic side)	Minimum 500 V AC for 1	Commission cab
V.	Digital output Modules	IPR Specifications	Sano, Parameter
Sr.no.	Parameter	IPR Specifications	Vendor's Specifications
a.	Number of output	10	b. Shielding
b.	Туре	Relay	Cable length
C.	Voltage range	5 ~ 30 V DC	
d.	Rated current at each point (max)	≥ 2.0 A	
e.	Isolation (field side and logic side)	Minimum 1000 V DC for 1 min	i. CPU
f.	Isolation resistance	Minimum 100 MΩ	Snno. Parameter
g.	Switching delay	Max. 10 ms	On board digital tro
vi.	Enclosure / Panel Box	points	mizostva alchem CNI
Sr.no.	Parameter	IPR Specifications	Vendor's Specifications
a.	Material	MS / Aluminium with colour coating	d. Memory
b.	Mounting arrangement	Wall mount	ii Ceonnanication
C.	Enclosed units	Control Unit which consist PLC, Driver unit, I/O modules, Power supply etc. (Refer block diagram No. 3)	St.as. Parameter a. Communication par inquired b. Data transmission of

4. Stepper motor

Sr.no.	Parameter	Specifications	Vendor's Specifications
a.		≥ 24VDC	
	Input voltage	STILL 2.225 WAR	against might) . A

b.	Tavana	≥ 13.55 N-cm	
-	Torque	amaissail (1990), sati for i	Transcript aggreet
C.	Direction	Both (forward -reverse)	
d.	Encoder	Yes	
e.	Decoder	Yes	
f.	Input and signal Cable	At least 25 meter (For Input	
	length	supply cable)	zana en a la companya de la companya
		At least 25 meter (For	
		signal cable)	
g.	Quantity	2 Nos.	
pinstà	Bidder's Sgn with Office		

5. Stepper Motor Driver

Sr.no.	Parameter	Specifications	Vendor's Specifications
a.		230 ± 10% V, 50Hz	
	Line supply		
b.		≥ 24 VDC	
	Motor Control voltage		
C.	Maximum current (A)	≥ 4A	
d.	Protection	Earth fault protection,	
		output short-circuit	
		protection, overvoltage	
e.	Degree of protection	IP 20	
f.	Digital inputs/outputs	10inputs - NPN/PNP;	
1.	Digital inputs/outputs	6outputs - NPN	
g.	Analog outputs	2 Analog outputs, output	
		voltage range +/- 10V,	
		10bits	
h.	Communication	USB/Modbus	
i.	Speed control input	External Analog input or	
1.	Speed control input	internal set point	
j.	Torque control input	External Analog input or	
J	1	internal set point	

1. Others

Sr.no.	Parameter	IPR Requirement	Vendor's response
a.		As per the Block diagram	
	Wiring assembly and	(PART-B) mentioned in the	Yes/No
	Installation	specifications	
b.		As mentioned in the PART-	
	General Requirement of	C & PART-D of the	Yes/No
	programming	specifications	

	Yes/No	As mentioned in the PAR E of the specifications	c. Scope of work
.0	. Sold and S	secreta the votes mades	
	Important signal Cable		e seessa kuu suutuu ku ka ka jaja sinta suksa kiris oo sa
Stan	Bidder's Sign with Official		
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	Stepper Motor Driver		
		- Homputs - NEN/PARP Fortgotts - NEN	
-			
	Communication		