

## Annexure B

### Pre-Qualification Criteria, Vendor Confirmation to Technical Specifications & Vendor's Details

<b>A. Pre-Qualification Criteria</b>		
SL.No	Pre-Qualification Criteria	Vendor's Confirmation /Acceptance
	The Bidder/Vendor has to compulsorily meet all the following requirements to get qualified for consideration of the technical offer for the mentioned items. The BIDDER has to submit supporting documents without which the offer will not be considered for technical evaluation If the vendor does not qualify as per PRE-Qualification criteria, the technical offer of such BIDDER / VENDOR offer will not be evaluated.	
1.	Vendor should have supplied similar type of PLC, HMI or automation systems in the past to industries.	
2.	Vendor shall submit previous PO copies from reputed customers (similar or equivalent to technical specification)	
3.	Vendor should submit the following details:	
	A. Name and postal address of the customer/company where similar materials supplied	
	B. Name and designation of the contact person of the customer, phone and email address of the contact person of the customer	
4.	BHEL will verify the above information provided by the bidder. In case the information provided by vendor is found to be false/incorrect, the offer shall be rejected.	

Vendor Signature & Seal

<b>B. Technical Specifications</b>		
SL. No	Description and Technical Specification of the item	Vendor's Confirmation/Acceptance
1.	<p>Profibus Remote IO Interface Module</p> <p>Specification:</p> <p>Profibus Remote IO Interface Module  Number of modules per DP slave interface, max.: 12  Timestamping suitable for isochronous mode  Rated value (DC): 24 V  Mains/voltage failure stored energy time: 5 ms or better  Input Current consumption, max.: 600 mA or better  Input Inrush current, typ.: 3 A or better  Output voltage / header Rated value (DC): 5 V ± 5%  Output current for backplane bus (5 V DC), max.: 1.5 A  Power loss Power loss, typ.: 5.5 W or better  Addressing volume: Inputs: 244 byte  Addressing volume Outputs: 244 byte  Accuracy: 1 ms or better; 1 ms at up to 8 modules; 10 ms at up to 12 modules  Number of stampable digital inputs, max.: 128; Max. 128 signals/station; max. 32 signals/slot  Transmission procedure: RS 485  Transmission rate, max.: 12 Mbit/s or better  Output current of the interface, max. :70 mA or better  Design of the connection: 9-pin sub D socket  Bus protocol/transmission protocol: PROFIBUS DP to EN 50170  Number of profibus DP node addresses max.: 1 to 125 permitted  IP degree of protection: IP20 or better  Width 40 mm ± 5%  Height 125 mm ± 5%  Depth 117 mm ± 5%  Weight, approx.: 360 g ± 5%  Warranty: 1 year from date of acceptance</p> <p>Note:</p> <ol style="list-style-type: none"> <li>1. Vendor may visit BHEL works to understand the requirements, if required.</li> <li>2. Detailed product catalogue to be submitted along with the offer.</li> <li>3. This Profibus module shall be compatible with Siemens PLC S7-300 CPU</li> <li>4. Vendor to ensure compatibility with the existing systems here. Vendor shall prove-out integration of the supplied model in case it is different from the reference model.</li> </ol> <p>Reference Make and Model: Siemens (Part No: 6ES7153-2BA02-0XB0)</p>	

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2. 8 channel Analog Input Module

Specification:

Analog Input Module

Number of inputs with resistive transducers: 8

Programmable inputs

Voltage input:  $\pm 5\text{ V}$ ,  $\pm 10\text{ V}$ ,  $1\text{ V to }5\text{ V}$ ,  $0\text{ V to }10\text{ V}$ ,  $\pm 50\text{ mV}$ ,  $\pm 500\text{ mV}$  &  $\pm 1$

Current Input:  $\pm 20\text{ mA}$ ,  $0\text{ mA to }20\text{ mA}$  and  $4\text{ mA to }20\text{ mA}$

Resistance:  $0\text{ kohm to }6\text{ kohm}$  and  $0\text{ ohm to }600\text{ ohm}$

Resistance thermometers: Pt 100, Ni 100 & Standard, Pt 100, Ni 100 & Klima, Ni 1000, LG-Ni 1000, Standard, Ni 1000, LG-Ni 1000 & Klima.

Cable length Shielded: max. 200 m, max. 50 m at 50 m  $\pm 5\%$

Permissible voltage at voltage input: max. 30 V or better

continuous Permissible current at current input: max. 40 mA or better

Constant current for resistive transducers

Resistance thermometer and resistance measurements 0 ... 600 ohm:

max. 0,83 mA or better

Resistance measurement 0 ... 6 k ohm : max. 0,25 mA or better

Permissible potential difference between inputs (CMV):  $2.0\text{VDC} \pm 5\%$

Between the inputs and M internal Viso:  $75\text{ VDC} / 60\text{ VAC} \pm 5\%$

Insulation test voltage:  $500\text{VDC} \pm 5\%$

Current consumption: max. 90 mA  $\pm 5\%$

Power loss of the module: typ. 0.4 W  $\pm 5\%$

Integration time: 60ms

Basic conversion time, including the integration time: 66ms

Resolution in bits (including overshoot range): 14bits

Dimensions W x H x D (mm):  $40 \times 125 \times 117 \pm 5\%$

Weight: Approx 250g  $\pm 5\%$

Warranty: 1 year from date of acceptance

Note:

1. Vendor may visit BHEL works to understand the requirements, if required.

2. Detailed product catalogue to be submitted along with the offer.

3. This analog input module shall be compatible with Siemens PLC S7-300 CPU

4. Vendor to ensure compatibility with the existing systems here. Vendor shall prove-out integration of the supplied model in case it is different from the reference model.

Reference Make and Model: Siemens (Part No: 6ES7331-1KF01-0AB0)

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<p>3.</p>	<p>8 channel Analog Output Module Specification:</p> <p>Analog Output Module Number of analog outputs: 8 Input Rated Voltage: 24VDC ± 5% Input current: 340 mA ± 5% Power loss: 6W ± 5% Voltage output, short-circuit protection: Yes Voltage output, short-circuit current, max. : 25 mA ± 5% Current output, no-load voltage, max.: 18 V ± 5% Output voltage: 0 to 10 VDC, 1 VDC to 5 VDC and -10 VDC to +10 VDC Output current: 0 to 20 mA, -20 mA to +20 mA and 4 mA to 20 mA Resolution with overrange: 12 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit Conversion time (per channel): 0.8 ms or better Diagnostics function for alarms Width 40 mm, Height 125 mm, Depth 117 mm. Tolerance ± 5% Weight, approx. 272 g ± 5% Warranty: 1 year from date of acceptance</p> <p>Note:</p> <ol style="list-style-type: none"> <li>1. Vendor may visit BHEL works to understand the requirements, if required.</li> <li>2. Detailed product catalogue to be submitted along with the offer.</li> <li>3. This analog output module shall be compatible with Siemens PLC S7-300 CPU</li> <li>4. Vendor to ensure compatibility with the existing systems here. Vendor shall prove-out integration of the supplied model in case it is different from the reference model.</li> </ol> <p>Reference Make and Model: Siemens (Part No: 6ES7332-5HF00-0AB0)</p>	
<p>4.</p>	<p>Touch Panel HMI 12" Specification:</p> <p>Touchscreen HMI Design of display: TFT Screen diagonal: 12.1 in Display width: 261.1 mm Display height: 163.2 mm Number of colors: 16 777 216 Horizontal image resolution: 1280 pixel or better Vertical image resolution: 800 pixel or better MTBF backlighting (at 25 °C): 80000 h or better Backlight dimmable Yes; 0-100 % Numeric keyboard Yes: Onscreen keyboard alphanumeric keyboard Yes: Onscreen keyboard Design as touch screen: Yes; Analog-resistive Rated value (DC): 24 V ± 5% permissible range, lower limit (DC): 19.2 V ± 5% permissible range, upper limit (DC): 28.8 V ± 5% Current consumption (rated value): 0.85 A ± 5% Starting current inrush I<sup>2</sup>t: 0.5 A<sup>2</sup>-s</p>	

	<p>Active power input, typ: 20 W ± 5%</p> <p>Flash: Shall be available</p> <p>RAM: Shall be available</p> <p>Memory available for user data: 12 Mbyte or better</p> <p>Clock: Real time hardware, software, retentive and synchronizable</p> <p>Number of industrial Ethernet interfaces: at least 2 ports (switch)</p> <p>Number of RS 485 interfaces: at least 1; (RS 422 / 485 combined)</p> <p>Number of USB interfaces: 2; USB 2.0</p> <p>USB Mini: B 1; 5-pole</p> <p>Number of SD card slots: 2 or higher</p> <p>Industrial Ethernet status LED: 2</p> <p>Number of ports of the integrated switch: 2</p> <p>Protocols: PROFINET, Supports protocol for PROFINET IO, IRT Yes; As of WinCC V12, PROFIBUS, EtherNet/IP &amp; MPI</p> <p>Protocols (Ethernet) : TCP/IP, DHCP , SNMP , DCP &amp; LLDP</p> <p>MODBUS: Available</p> <p>IP (at the front) IP65 or better</p> <p>IP (rear) IP20 or better</p> <p>Width of the housing front: 330 mm ± 5%</p> <p>Height of housing front: 241 mm ± 5%</p> <p>Mounting cutout, width: 310 mm ± 5%</p> <p>Mounting cutout, height: 221 mm ± 5%</p> <p>Overall depth: 65 mm ± 5%</p> <p>Weight (without packaging): 2.8 kg ± 5%</p> <p>Warranty: 1 year from date of acceptance</p> <p>Note:</p> <ol style="list-style-type: none"> <li>1. Vendor may visit BHEL works to understand the requirements, if required.</li> <li>2. Detailed product catalogue to be submitted along with the offer.</li> <li>3. This touch panel shall be compatible with Siemens PLC S7-300 CPU and Simotion D435CPU</li> <li>4. Vendor to ensure compatibility with the existing systems here. Vendor shall prove-out integration of the supplied model in case it is different from the reference model.</li> </ol> <p>Reference Make and Model: Siemens (Part No:6AV2124-0MC01-0AX0)</p>	
<b>C. Supplier/Vendor details</b>		
1	Supplier Name & Address	
2	Contact Person Name, email id and Mobile Number	
3	HSN code for the quoted items	
4	GST% included in the quoted price	