



वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्  
Council of Scientific & Industrial Research  
राष्ट्रीय वांतरिक्ष प्रयोगशालाएं  
National Aerospace Laboratories

INVITATION FOR TENDERS

Tender No. NAL/PUR/ELK/319/22-Y

Dated: 17/05/2023

CSIR - National Aerospace Laboratories (NAL), Bengaluru, Karnataka, Republic of India, is one of the premier research laboratories under aegis of Council of Scientific and Industrial Research (CSIR), an autonomous body under the Department of Scientific and Industrial Research, Government of India, New Delhi. CSIR-NAL is a Science and Knowledge based Research, Development and Consulting Organisation. It is internationally known for its excellence in Scientific Research in Aerospace Engineering.

The Director, CSIR-NAL invites online quotation(s) for the procurement of the following item(s) for day to day research work.

Sl. No.	Description of Item(s)	Unit	Quantity
1	<b>Supply of Feeder/Transformer protection Relay of Make: Schneider Electric and Model: Easergy-universal relay P3U306AAA1BCAA (REL52022) compatible for Modbus TCP/IP Ethernet communications. The detailed specifications are as per the "Annexure" enclosed.</b> <b>Important:</b> <b>1).</b> The supply of mentioned goods shall be executed only by the Schneider's OEM or by their Authorized Service Business Partners only. <b>2).</b> Proof of valid Schneider's OEM letter / Authorized Service Business Partner letter to be enclosed / uploaded along with your offer, failing which offers will be liable for rejection.	Nos	6
2	<b>Installation, Testing &amp; commissioning</b> of new relays in the existing panels. <b>Note:</b> This scope includes all complete: 1) Retrofitting the relays in the Existing 11 kV panels with necessary required modifications like making cut outs, fixing of relays, inter connecting control wirings with colour coded wires of suitable current rating and wiring terminations with ferrules in the existing panels. 2) Relays settings 3) Test the relay using secondary injection kit as per the user requirements as a Witness tests. <b>Important:</b> <b>1).</b> This work involves of disconnecting of old Relay units and SITC of with new one. <b>2).</b> This Job shall be carried out only by Schneider's OEM or by their Authorized Service Business Partners only. <b>3).</b> Proof of valid Schneider's OEM letter / Authorized Service Business Partner letter to be enclosed/uploaded along with your offer, failing which offers will be liable for rejection.	Nos	6

<b>Single / Double Bid Only</b>	Single	Tender Type	Open
<b>Bid Security (EMD) (in INR)</b>	Bid Security Declaration should be enclosed with quotation	Bid submission end date	08-Jun-2023 10.00 Hrs
<b>Performance Security</b>	Nil	Bid opening date	09-Jun-2023 11.00 Hrs



01. Tender document(s) may be downloaded from the Central Public Procurement Portal i.e., <https://www.etenders.gov.in>. Aspiring Bidders' who have not registered in the portal can do the same at free of cost before participating in our tendering process. Bidders are advised to go through instructions provided at 'Instructions for Online Bid Submission', in the portal.
  02. Tenderer's can access tender document(s) on the website (for searching in the NIC site <https://www.etenders.gov.in>, kindly go to "Tender Search", option, select tender type and select 'Council of Scientific and Industrial Research', in organisation tab and select NAL-Bengaluru-CSIR in department type. Thereafter, Click on "Search", button to view all CSIR-NAL, Bengaluru tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online in the website as per the schedule given in the next page.
  03.
    - a. Global Tender Enquiry: Either the Indian Agent on behalf of the Foreign Principal or the Foreign Principal can bid directly in a tender but *not* both. However, the offer of the Indian Agent should also accompany the authorisation letter from their principal. To maintain sanctity of tendering system, one Indian Agent *cannot* represent *two* different Foreign Principals in *one* tender
    - b. Open Tender Enquiry: Only Local supplier's with prescribed local content as detailed in Department for Promotion of Industry and Internal Trade (DPIIT) Order No. P-45021/2/2017-PP (BE-II), dated 16<sup>th</sup> Sep, 2020, and subsequent orders issued by the Ministry of Finance, Government of India from time to time, are eligible for bidding. Bidders' must enclose the certificate declaring their local content of supplies as per our standard form.
- Note:** Kindly, refer to the first page of Notice Inviting Tender for tender type i.e. Open Tender Enquiry / Global Tender Enquiry and submit your bid accordingly.
04. Unsolicited / Conditional / Unsigned Quotations/Quotations received after the due date and time shall be summarily rejected. The Bidder should comply with the terms and conditions of the tender, failing which, their offer will be liable for rejection.
  05. The bids' failing to comply with the following clauses will be summarily rejected.
    - a. The Bidders' proposing to supply finished products directly/indirectly from vendors' of countries sharing the land border with India should submit a copy of registration done with DPIIT.
    - b. If the products supplied are not from vendors of countries sharing land border with India, the Bidders' have to enclose a declaration to that effect.
  06. As per Government of India procurement policies,
    - a. The purchaser intends to give purchase preference to local supplies (preference to Make in India) in case the cost of procurement is up to Rs. 50 (fifty) lakhs.
    - b. The procuring entity intends to give purchase preference to products/goods manufactured by Micro, Small and Medium Enterprises.
  07. Bidders' are requested to refer to the instructions regarding Procurement Policies for "Make in India", issued by Ministry of Commerce and Industry, Department of Industrial Policy and Promotion dated. 28-May-2018, and 4-Jun-2020 and guidelines as and when issued.





## CSIR-National Aerospace Laboratories, Bengaluru-560 017, INDIA

08. Kindly, note CSIR-NAL **GST No. 29AAATC2716R1ZB**. And, the bidders' are requested to furnish their GST No. in their invoice failing which we will **not** be able to make timely payment.
09. Printed conditions, if any, submitted along with your quotation will not be binding on us.
10. The prospective bidders' are requested to refer to the Standard Terms and Conditions available on NAL Internet ([www.nal.res.in](http://www.nal.res.in)) under the icon Tender-Purchase before formulating and submitting their bids'.
11. The Director, CSIR- National Aerospace Laboratories, Bengaluru, reserves the right to accept any or all the tenders either in part or in full or to split the order without assigning any reason(s) thereof.
12. Participation in this tender is by invitation only and is limited to the selected bidders. Unsolicited offers are liable to be ignored. However, bidders who desire to participate in such tenders in future may bring it to the notice of Procuring Entity and apply for registration.
13. Bidder to certify the quoted price is not higher than the price quoted with other Govt. institution for similar specifications and quantity during the current financial year.

Thanking you,

Yours faithfully

**Stores & Purchase Officer**  
**For and on behalf of CSIR-NAL**

Sl.No	Specifications	Details
1	Relay Make & Model	Schneider Electric, Easergy P3U30 Universal relay. Model: P3U306AAA1BCAA(REL52022)
2	Protection and control functions	<p>The relay shall include the following protection and control features:</p> <ol style="list-style-type: none"> <li>1. Phase overcurrent</li> <li>2. Directional phase overcurrent</li> <li>3. Earth fault overcurrent</li> <li>4. Directional earth fault</li> <li>5. Transient earth fault</li> <li>6. Capacitor bank unbalance</li> <li>7. Broken conductor</li> <li>8. Cold load pick-up</li> <li>9. Switch ON to fault (SOTF)</li> <li>10. Breaker failure</li> <li>11. Directional active underpower</li> <li>12. Fault locator 21FL</li> <li>13. Recloser</li> <li>14. Phase undercurrent</li> <li>15. Excessive starting time, locked rotor</li> <li>16. Motor restart inhibition</li> <li>17. Capacitor overvoltage</li> <li>18. Negative sequence overcurrent</li> <li>19. Overvoltage</li> <li>20. Undervoltage</li> <li>21. Positive sequence undervoltage</li> <li>22. Earth fault overvoltage</li> <li>23. Underfrequency</li> <li>24. Rate of change of frequency</li> <li>25. Synchro-check</li> <li>26. Lockout relay</li> <li>27. CT supervision</li> <li>28. VT supervision</li> <li>29. H2 detection</li> <li>30. H5 detection</li> <li>31. H5 detection 68H5</li> <li>32. Programmable stages</li> <li>33. Programmable curve</li> <li>34. Switchgear control and monitoring</li> <li>35. Programmable switchgear interlocking</li> <li>36. Local control on single-line diagram</li> <li>37. Local control with I/O keys</li> <li>38. Local/remote control</li> <li>39. 2 function keys</li> <li>40. Mobile application with Easergy SmartApp</li> <li>41. Web-server</li> <li>42. Programmable logic</li> </ol>

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Sl.No	Specifications	Details
3	Advanced Communication	<p>The relay should have the following advanced communication.</p> <ol style="list-style-type: none"> <li>1. RJ45 communication port with Ethernet for continuous monitor and control from a remote computer with SCADA system or PLC must be possible</li> <li>2. Communication modules, usable for different and redundant protocols (IEC 61850 ed. 1, IEC 61850 ed.2, IEC 60870-5-101, DNP3 TCP, Modbus TCP and EtherNet/IP).</li> <li>3. Hardware modules <ul style="list-style-type: none"> <li>• Extension + Back up memory</li> </ul> </li> <li>4. Ethernet Protocols <ol style="list-style-type: none"> <li>1. IEC 61850 ed. 1</li> <li>2. IEC 61850 ed. 2</li> <li>3. IEC 60870-5-101</li> <li>4. DNP3 TCP</li> <li>5. Modbus TCP</li> <li>6. EtherNet/IP</li> </ol> </li> </ol>
4	Metering and Monitoring	<p>The <b>P3U30</b> relay should be capable of measuring and monitoring all the following components.</p> <ol style="list-style-type: none"> <li>1. Current 3-phase</li> <li>2. Current zero sequence</li> <li>3. Current positive sequence</li> <li>4. Current negative sequence</li> <li>5. Current ratio of negative and positive</li> <li>6. Voltage phase to earth</li> <li>7. Voltage phase to phase</li> <li>8. Voltage zero sequence</li> <li>9. Voltage positive sequence</li> <li>10. Voltage negative sequence</li> <li>11. Voltage ratio of negative and positive</li> <li>12. Short circuit fault reactance</li> <li>13. Fault location current</li> <li>14. Earth fault reactance</li> <li>15. Frequency</li> <li>16. Active power</li> <li>17. RMS active power</li> <li>18. Reactive power</li> <li>19. RMS reactive power</li> <li>20. Apparent power</li> <li>21. RMS apparent power</li> <li>22. Active energy</li> <li>23. Reactive energy</li> <li>24. Cos <math>\phi</math></li> <li>25. Tan <math>\phi</math></li> <li>26. Power angle</li> <li>27. Power factor</li> <li>28. Voltage phasor diagram view</li> <li>29. Current phasor diagram view</li> <li>30. Current 2nd, 15th harmonics with THD</li> <li>31. Voltage 2nd, 15th harmonics with THD</li> </ol>

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		<ul style="list-style-type: none"> <li>32. Voltage interruption</li> <li>33. Condition monitoring CB wear</li> <li>34. Trip circuit supervision</li> <li>35. Circuit breaker monitoring</li> <li>36. Relay self-monitoring</li> </ul>
5	Logs and records	<ul style="list-style-type: none"> <li>1. Event recording</li> <li>2. Disturbance recording</li> <li>3. Tripping context</li> </ul>
6	Technical Features	<ul style="list-style-type: none"> <li>1. To allow continuous operation even in high temperature ambient (up to 60 degrees centigrade), within the whole voltage range</li> <li>2. High level of electrical insulation between input and output circuits</li> <li>3. It should have Self-cleaning contacts.</li> <li>4. High-speed operation.</li> <li>5. Simple design and less maintenance.</li> <li>6. IP degree of protection IP54 conforming to IEC 60529</li> <li>7. In compliance with the most demanding test standards: IEC, EN, IEEE and bearing the CE mark</li> <li>8. Simplicity of installation (plug-in relays in a wide range of sockets with different installation configurations)</li> <li>9. The contact reset should be of Hand reset and electrical reset.</li> <li>10. When the relay operate coil is energized, the flag indicator should display. The indicator should remain visible until it is reset by a mechanical lever operated by hand from the front cover of the relay.</li> </ul>

*(Signature)*  
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