



सी.एस.आई.आर-संरचनात्मक अभियांत्रिकी अनुसंधान केन्द्र  
**CSIR-STRUCTURAL ENGINEERING RESEARCH CENTRE**

(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद Council of Scientific and Industrial Research)

सी.एस.आई.आर परिसर CSIR CAMPUS, तरमणि TARAMANI, चेन्नै CHENNAI - 600 113. भारत INDIA  
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**(TWO BID SYSTEM)**

**EMD TO BE SUBMITTED : Rs.90,000/-**

(EMD by way of Demand Draft drawn infavour of "The Director, CSIR-SERC, Chennai" should be submitted to CSIR-SERC before 17.07.2018 -14.00hrs.IST)

Tender Enquiry No.A3(51006)2017/Pur dt.21.6.2018.

**DUE DATE FOR SUBMISSION OF OFFER: 17.07.2018 – 14.00 hrs. IST**

The quotation (Technical Bid) will be opened on 18.07.2018 at 14.30 hrs. IST.

**Only online e- tenders are invited for the following:**

SI.No	Detailed Specification of the Stores	Quantity
1.	Supply, Installation, Commissioning of Multi-Channel Alternating current potential difference (ACPD) technique based crack depth measuring equipment for online monitoring and measurement of fatigue crack depth in metals as per the detailed specifications given below:	1 set.

**TECHNICAL SPECIFICATIONS**

Number of Channels	32 channels(16 crack locations)
Number of field current output channels	Minimum 4
Configurability of crack and reference signal channels with current channels	It should be possible to assign the crack and reference signal channels to different current channels as per user requirement.
Frequency of current to be applied on the specimen.	Continuously variable frequency output from 500 Hz to 200 kHz
Field output Current	Output currents up to 5 amps. Continuously variable
Crack and reference signal output filtering capabilities	Selectable low pass filter setting from 0.1 to 1 kHz in steps for crack and reference signal outputs
Analog output for all channels	Analog output should be available for external data logging.
Output signal offset	Continuously variable signal offset should be available.
Signal gain setting	User selectable from 1000 to 30000.
Output voltage signal	Resistive and inductive components to be displayed.
Signal pre amplifier requirement	Pre-amplifiers to be provided as standard for each channel for superior SNR
Signal pre amplifier to main equipment signal cable length	Minimum 3 m signal cable length from main equipment to pre amplifier.

Data communication with PC	RS232C / USB port / LAN
Hand held probes for single point crack sizing	The equipment should have hand held probe attachment for single point manual crack depth measurement.
Front panel display	Front panel display of current, frequency, crack voltage, reference voltage, crack depth, bias setting, filter setting etc
Field current cables and Signal measurement cables	Complete set of necessary cables required to connect all the 16 crack location to the main equipment to be supplied along with the equipment.
Controllability with PC	The equipment should be controllable from a laptop computer and all the test parameters should be set and adjusted through software control
Software capabilities	Should display graphically crack shape evolution and crack growth extension curves. In multi-channel ACPD operation, the software should acquire crack and reference voltage measurements from the probes attached to the crack locations. Voltages acquired from each pair to be used to calculate the crack depth in engineering unit. Scans of the probes should be made at user-defined intervals and the software should plot crack growth curves for any given location. The acquired crack growth data with time stamp should be stored in excel ,text format for further data processing
Applications	Crack initiation, Fatigue crack initiation, Slow crack growth, Crack sizing, Dynamic crack growth studies, Crack closure studies, Condition monitoring, Stress corrosion testing. The equipment along with the necessary software, hardware and should be able to give accurate crack depth readings in ferrous and nonferrous metals.
Power Requirements	230 V AC, 50 - 60 Hz
Minimum PC Requirements	Dell/ HP Laptop PC Compatible with the software and hardware of the equipment. Minimum 8 GB RAM /1 TB HDD storage
Warranty	The supplier shall provide warranty for minimum one years after installation and commissioning of the equipment.
Optional item to be quoted separately along with main quotation	<ol style="list-style-type: none"> <li>1. Extension of warranty for additional two years from the date of completion of one-year standard manufacturer warranty.</li> <li>2. One complete set of field current and signal cables required to connect all the 16 crack locations.</li> </ol>



## CSIR – STRUCTURAL ENGINEERING RESEARCH CENTRE, INDIA

### Other Terms and Conditions:

- Installation and commissioning of the equipment shall be carried out and demonstrated by the supplier satisfactorily
- Training shall be given to FFL Staff for operation and maintenance of the equipment.
- Two sets of operation and maintenance manuals along with drawings shall be supplied along with the equipment.
- Essential spares required after warranty period shall be quoted separately.
- The firm shall have capability to provide service support during and after warranty period. Details of the nature of service support the firm can provide should be given.
- The quotation shall be submitted in two parts namely technical bid and commercial bid. The technical bid should contain i) Details of the firm ii) their capabilities for supply, installation, commissioning and servicing of similar equipment, iii) Details with contact address for supplies of similar equipment made during the last 5 years iv) Detailed technical specifications of the equipment including software along with technical catalogues. Bids not containing the above details will be rejected.

Terms and Conditions:-

All the terms of supply as available in our website [www.serc.res.in](http://www.serc.res.in) is applicable.

Controller of Stores & Purchase  
For Director