

Detailed Specification

Enquiry:MM/172/G29970

Contact Details

Name: Binduja Menon

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Email ID: binduja@factltd.com

Please submit your offer for supply of the following items as per the instructions, technical specifications and other terms and conditions specified herein/ attached.

Note:

1. The delivery period mentioned in the BoQ is our indicative requirement. You may offer your earliest delivery period.

Please refer our above referred enquiry number in all correspondence.

SL No.	Material Code	Detailed Specification/s	Quantity	Unit of Measure
1	691026130	Specifications : Vibration Analyser with technical Specifications as per TPS. CD-TSD-2023-15	1	Number

SPECIAL TERMS AND CONDITIONS

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1) Calibration certificate.

Calibration Certificate (Hard copies) (date of calibration shall not precede more than 2 weeks from the date of supply) as required in the Specification shall be furnished along with the supply/despatch documents.

2) Guarantee Certificate (Hard copy) shall be submitted along with the supply.

The items shall be guaranteed for 12 months from supply or 18 months from date of fitment, whichever is earlier, against performance/material/manufacturing defects.

3) Operation and Maintenance manual (1 Hard copies each) shall be submitted along with the supply.

Special Conditions:

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1)The vibration analyser shall be delivered to FACT-CD with all the features and accessories as specified in the FACT-TPS.

2)Payment will be made after delivery of the equipment at the FACT-CD site and commissioning of the equipment by the authorised Engineer of OEM/ supplier at site as specified in the TPS . Commissioning involves demonstrating the features of the equipment on working plant machinery in FACT CD.

3)Inspection by FACT is required prior to supply after placement of PO.

Note: Only Vendors who have a service centre in South/ Central India (i.e in states of Kerala / Andhra /Telangana / Karnataka / Tamil Nadu / Maharashtra) shall be considered.

DATA SHEET	SPECIFICATION FOR FOUR CHANNEL FFT-BASED VIBRATION ANALYZER	Spec No: CD-TSD-2023-15	
		Date: 12.12.2023	Page 1 of 4

Scope of Supply

1) DUAL CHANNEL FFT-BASED VIBRATION ANALYZER with accessories such as Battery, Battery Charger, Standard Industrial Accelerometer, Accelerometer cables etc. as detailed in page 4.

Specifications for DUAL CHANNEL FFT-BASED VIBRATION ANALYZER

Diagnostic Specifications	
Analysis For Machines like	Motors, fans, blowers, gearboxes, couplings, centrifugal pumps, piston pumps, sliding vane pumps, propeller pumps, screw pumps, rotary thread/gear/lobe pumps, closed coupled machines etc.
Frequency Range	30 to 1,00,000 CPM
Electrical Specifications:	
Channels for Measurement	4 x AC/DC channels
	1 x TACHO channel for speed probe/external trigger
A/D Converter:	24 bit internal signal processing,
Dynamic Range:	80 dB or higher
No. of Channels:	4 channels
Interface:	USB 3.0 / 2.0 compatible
Battery:	8 hours of operation
Battery capacity	Vendor to specify
Power consumed by the equipment while working in one hour	Vendor to specify
Data Storage:	32 GB or Greater
AC Adapter	Input voltage: 220V AC to 240V AC
	Input frequency: 50
Battery type	Rechargeable type. Vendor to specify whether it is Non-Removable / Inbuilt – type.
Temperature Range:	Operating temperature range from 0 degree Celsius to 45 degree Celsius or greater
Operating Humidity	10% to 95% RH (non-condensing)
Packaging: .	Rugged design for industrial use with an environmental protection rating of IP-65 or above

PRPD. BY : <i>S. Vishwasathma</i>	CHKD. BY : <i>J. SMTS.</i>	APPRD. BY : <i>Devi DGM(TS)</i>
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FACT – COCHIN DIVISION

TECHNICAL SERVICES

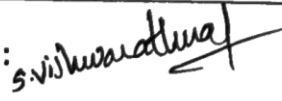


SPECIFICATION FOR FOUR CHANNEL FFT-BASED VIBRATION ANALYZER

Instrumentation Specifications:	Sampling Mode: Fully simultaneous for 4 channels
	Real-time FFT
	ENVELOPE analysis
	low-speed bearing analysis
	Order analysis
	Band pass analysis
	RPM measurement
	Orbit Analysis , Balancing Tool - required
	ODS: Operating deflection Shapes (Optional)
	Built-in Camera (Optional)
	Waterfall plots (trends) – required
	Phase Analysis – required
	Orbit Analysis- – required (equipment must be capable to do orbit analysis if required.)
	Data collection with minimum 4 channels independently and simultaneously
	Real-time acceleration analysis
	Real-time spectral analysis
	Stethoscope: listening to the bearing/machine noise (Optional)
	Recorder: raw signal recording for later post-analysis
	Capability to detect high-frequency impacts typically resulting from bearing and gear failure modes . (enveloped demodulated measurement: of signals)
	Display amplitude data in following measurement scales : 1) Displacement (mills or microns), 2) Velocity(mm/sec) – both in RMS and peak values 3) Acceleration in mm/sec ² or in terms of 'g' value.
Perform FAST Fourier transform on the captured vibration data and display peak Frequencies (atleast 5 nos) in Hz, CPM or Orders.	
Capability to capture transient data and transfer it to condition monitoring software for later analysis	
Conduct bump test for natural frequency testing.	
The capability of off-route data setup, collection, analysis, and storages	

PRPD. BY : <i>S. Viswanathan</i>	CHKD. BY : <i>JK</i>	APPRD. BY : <i>Dr. ...</i>
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FFT Resolution in hertz:	0.5 hertz. (30 CPM)
No of Lines:	Vendor to specify based on specifications above
Sensor Compatibility:	Accept input from vibration sensors like accelerometers, velocity probes, proximity probes, and impact hammers.
Display and Input Specifications:	Display: LCD display with clear viewing area (Length 95mm or above, Width 60mm or above), backlit, colored, and equipped with contrast adjustment, 640 x 480 pixels
	Keypad: Alphanumeric keypad for field creation of notes
General Features:	Audio (beep) and visual (LED flash) feedback when any button is pressed on the front panel
	External input connection for RPM/ Phase Input.
	Capability to serve as a temporary Online Monitor for a period of time.
	Language Support: English.
Calibration Certificate	Date of calibration shall not be more than 3 weeks before the date of supply. Calibration certificate shall be furnished along with the supply for a period of one year as a minimum.
Guarantee Period:	1 year for Equipment and accessories from the date of commissioning, against manufacturing defects/poor workmanship. Original Guarantee certificate shall be furnished along with the supply.
Software compatibility:	Windows 10 or above
Software Function: The software shall have the following features.	Downloading and archiving facility for FFT spectrum, Time waveform, Orbit analysis, Cross channel measurement from data collector/Analyzer.
	Phase data measurement and cross channel analysis
	Artificial Intelligence enabled Fault frequency identification for bearings, gears, electric motors etc.
	Route based analysis . (Collecting vibration data on a pre-determined route set by the operator .)
	Basic database creation and management
	Extensive report generation
	Advanced trending and analysis tools such as display individual or multiple trends, Spectrum and Waveform , waterfall

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Accessories Included:	Battery Charger – (as a part of the machine.)
	Standard Industrial Accelerometer (1 no.) with Magnetic base for Accelerometers (1 no.)
	Accelerometer cables (1 nos. straight cable of length 1.5 to 2.0m.)
	Cable for connecting the analyser to the buffered output of the online monitoring system(1 no.)
	Tachometer (1 no) along with Cable (1 no) for connecting the tachometer output to vibration analyser and reflective tapes(few rolls) .
	Storage case (1 no.)
	Hand and shoulder carrying straps (1 no.)
	Software backup CD with technical documentation
	Any other items if required other than the above shall be specified and included in the vendor's scope of supply.

Sensor Specifications	
Sensor Type	Accelerometer
Sensitivity at 25°C	100 mV/g
Transverse Sensitivity	7% of axial
Acceleration Range	50 g PEAK
Frequency range	10 Hz to 10,000 Hz
Isolation	Base isolated
Sensing Element Design	Piezoelectric ceramic material
Case Material	stainless steel
Vibration Limit	500 g peak
Shock Limit	5000 g peak
Sealing	IP65
Temperature Range	(-40°C to 85°C)
Mounting	Rare earth magnet Mounting / Mounting Stud / Probe tip

Note: A Price List of 2 year Recommended spares shall be offered by the vendor.

PRPD. BY : <i>S.Viswanath</i>	CHKD. BY : <i>[Signature]</i>	APPRD. BY : <i>[Signature]</i>
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PRE-QUALIFICATION CRITERIA

Tender No. MM/172/G29970 dtd 19.08.2024

Special Note: If the Pre-qualification documents as sought below against each, are not seen uploaded along with the bid, the bid will liable to be rejected without further taking up with the bidder in the matter.

Sl. No.	Conditions	Documents Required	Bidder Confirmation / details of Document
1	a) Bidder shall be an original equipment manufacturer (OEM) or b) The bidder shall be the Authorized Dealer/ distributor/Channel partner of the OEM of the offered Vibration Analyzer for a period of minimum three years continuously as on date of Notice Inviting Tender (NIT) .	a) In case of OEM, Self-declaration by the Bidder . b) In case of Dealers / distributor/ channel partners an authorization letter from the OEM indicating that they are Authorized dealer/ distributor/ Channel partner of the OEM analyzer for the analyzer offered for a period of minimum three years continuously as on date of NIT.	
2	The Bidder shall submit Guarantee issued by the OEM for supply of spares and service support for a minimum period of 5 years from the date of supply.	Guarantee from OEM for Spare and Service support for a period of minimum 5 years.	
3	The bidder shall have executed Purchase/ work orders as per the conditions given below for supply of Vibration Analyzer in any Major Industrial establishments in sectors like Cement / Fertiliser / Oil and Gas /Petro Chemical/ Steel / Mining/Power in India during the last Seven years ending on the date of Enquiry: 1) A Multi phase, FFT based,4 channel vibration analyzer with facility for orbit analysis and balancing .	Copies of relevant Purchase order, Invoice and Payment receipt / Completion certificate /Recommendation of the payment of bill /Satisfactory Performance certificate from the end user.	
2	Average annual turnover during the last 3 financial years ending as on 31.03.2023 should be atleast Rs. 36 Lakh. However annual turnover during any of the 3 years shall not be less than Rs. 6 Lakh.	The bidder shall submit: Copies of audited P&L statement and balance sheets OR Turnover certificate of previous three financial years ending on 31.03.2023 issued by your Chartered Accountant.	

Note:

- 1) FACT shall have the liberty to verify the reference submitted by the bidders with the user
- 2) Pre –Qualified bids will only be considered for technical evaluation.
- 3) Bid submitted without EM D of Rs. 45,000/- will not be considered
- 4) The bidder should furnish all relevant documents and work order/ purchase order pertaining to the fulfilment of all the above requirements.
- 5) In the case of FACT work order / purchase order , bidders need to mention only the Order Number. Submission of document is not necessary in such cases.



COMPLIANCE STATEMENT

Sl. No.	Terms	Bidder confirmation
1	Calibration certificate. (Hard copies) Calibration Certificate (date of calibration shall not precede more than 2 weeks from the date of supply) as required in the Specification shall be furnished along with the supply/despatch documents.	
2	Guarantee Certificate (Hard copy) shall be submitted along with the supply. The items shall be guaranteed for 12 months from supply or 18 months from date of fitment, whichever is earlier, against performance/material/manufacturing defects.	
3	Operation and Maintenance manual (1 Hard copies) shall be submitted along with the supply	
4	The vibration analyser shall be delivered to FACT-CD with all the features and accessories as specified in the FACT-TPS.	
5	Payment will be made after delivery of the equipment at the FACT-CD site and commissioning of the equipment by the authorised Engineer of OEM/ supplier at site as specified in the TPS . Commissioning involves demonstrating the features of the equipment on working plant machinery in FACT CD.	
6	Inspection by FACT is required prior to supply after placement of PO.	
7	Please mention shortest possible delivery period.	
8	Please confirm : Price Basis – FOR FACT Stores (as per Gem T & C)	
9	Please confirm : Taxes and Duties - The Price offered in GEM is all inclusive of TAX. (as per Gem T & C)	
10	Please confirm : Payment Terms : 100% payment will be released within 10 days of the issue of consignee receipt-cum-acceptance certificate (CRAC) and on-line submission of bills as per GEM terms and conditions. (as per Gem T & C)	
11	Please confirm : Liquidated Damages: As per GeM – “@ 0.5% of the contract value of delayed quantity per week or part of the week of delayed period as pre-estimated damages not exceeding 10% of the contract value of delayed quantity without any controversy/dispute of any sort whatsoever”(as per GeM T & C)	

Note : All the above columns shall be filled properly, without leaving blanks. Please upload / return this document duly filled-in, along with your bid.