

**TECHNICAL SPECIFICATIONS OF SWEEP FREQUENCY RESPONSE
ANALYSER (SFRA) TESTING KIT**

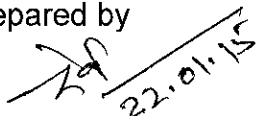
Sl. No.	Descriptions	Remarks / Vendor to specify																				
01	Application: <ul style="list-style-type: none">The test set should be fully automatic and suitable for measuring on three phase (two winding & three winding) & single phase Power Transformers up to 400 kV, 315 MVA rating & Rectifier transformer of 100 kA current rating.																					
02	Special Feature: <p>Offered SFRA kit should have following features...</p> <ul style="list-style-type: none">High measurement reliability and reproducibilityHigh signal to noise ratioAutomatic interpretation according to applicable standardsRugged, lightweight and smallMeasuring Modes- Amplitude & phaseEase to useAnalysis tools – Measured transfer function curves should be displayed as Magnitude (dB), phase (⁰), Impedance (Ω) and Admittance (S), user defined.Report generation from the measured data file or from any analysis data files.Data export- measured file should be stored in XML format & CSV (comma separated values) format and should directly opened in Microsoft Excel.Support the Hafely Test AG (Tettex) make, model FRA5310																					
03	<table><tr><th colspan="2">Measurement</th></tr><tr><td>Type</td><td><ul style="list-style-type: none">Active probes designed for high reproducibility user interface built in Touch screen Active probeBuilt in PC, Software running under Window XP embedded.External PC software- Window 98/2000/XPField proven designed, rugged and light weight (8.0kg Approx.) and dimension 40x30x15 cm Approx.</td></tr><tr><td>Frequency Range</td><td>10 Hz to 10 MHz Max, User defined</td></tr><tr><td>Voltage output</td><td>Max 12Vpeak-peak at 50 Ω and Max 24Vpeak-peak at 1MΩ, user defined</td></tr><tr><td>Input Impedance</td><td>Selectable 50 Ω or 1 MΩ</td></tr><tr><td>Output Impedance</td><td>50 Ω</td></tr><tr><td>Accuracy</td><td>±0.1 dB, Zero Calibrated</td></tr><tr><td>Dynamic range</td><td>>100dB</td></tr><tr><td>Measuring Points</td><td>Max 2000, user defined, logarithmically spaced</td></tr><tr><td>Protection</td><td>Against short circuit, Overload</td></tr></table>	Measurement		Type	<ul style="list-style-type: none">Active probes designed for high reproducibility user interface built in Touch screen Active probeBuilt in PC, Software running under Window XP embedded.External PC software- Window 98/2000/XPField proven designed, rugged and light weight (8.0kg Approx.) and dimension 40x30x15 cm Approx.	Frequency Range	10 Hz to 10 MHz Max, User defined	Voltage output	Max 12Vpeak-peak at 50 Ω and Max 24Vpeak-peak at 1MΩ, user defined	Input Impedance	Selectable 50 Ω or 1 MΩ	Output Impedance	50 Ω	Accuracy	±0.1 dB, Zero Calibrated	Dynamic range	>100dB	Measuring Points	Max 2000, user defined, logarithmically spaced	Protection	Against short circuit, Overload	
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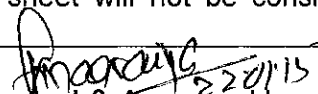
04	Data Display		
	Scaling	Logarithmic or Linear, user defined.	
	Frequency Range	10 Hz to 10 M Hz Max, User defined	
	Plot, Frequency Vs	Magnitude, Impedance, Phase, Admittance	
	Processor	Celeron M, 1GHz or better	
	Data Storage	40GB Hard Disk or better	
	RAM	256MB or better	
	Display	10.0", Color TFT or better	
	Interfaces	USB 2.0 x 2, RS232	
	User Interface	Built in touch screen	
05	Environmental Specification		
	Operating temperature	0 °C to 50 °C	
	Storage temperature	0 °C to 55 °C	
	Relative Humidity	10 to 90% Non-condensing	
06	Input Power Supply		
	Input Power Mains Supply	90 Volts to 265 Volts, AC Single Phase, Frequency 50/60Hz	
7	The Test equipment shall be offered complete with the items mentioned below		
	Main equipment i.e. SFRA testing kit with followings <ul style="list-style-type: none">• Power supply cord,• 02 Active probes with 15 m double shielded cables,• 02 ground tape/leads 10 m,• 02 Ground tape/lead clamp,• Storage case and bag for cables• User/Maintenance Manual 02 set• Calibration/Test certificates 02 set• Main cable CDs with external PC analysis software		
08	Spare Leads		
	<ul style="list-style-type: none">• 01 set of spare cables (02 Active probes-Source & Receiver with 15 m double shielded cables) to be included in scope of supply.		
09	Installation & commissioning: The system shall be installed and commissioned at BHEL Jhansi work by supplier's representative free of charge. Demonstration of all features of SFRA Testing kit & it's all accessories to satisfaction of BHEL for their efficient and effective use for at least three no of jobs. Demonstration by actual use of all supplied attachments and accessories to their full capacity.		
10	Performance & Warranty Certificate: The Supplier shall guarantee the product performance for 24 months from the date of successfully commissioning at our works and shall provide spares and services during guarantee period to maintain the Sound Level meter in working condition.		
11	Live Demonstration: Live demonstration of offered meter on free of charge shall be called during technical evaluation if required.		
Note: Supplier should submit his technical compliance/comments against each of the above points in above format. Technical bid without complete technical compliance sheet will not be considered for technical evaluation.			

Prepared by



22.01.15

Checked & Approved by



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