



SECTION – V

TECHNICAL SPECIFICATION

- i. The bidder must mark "yes" (for acceptance) or "no"(for non-acceptance) in the "bidder acceptance" column of the purchaser's technical datasheet.
- ii. All the specifications/points must necessarily be filled in. any point left out is deemed as not accepted without any reason thereof.
- iii. Relevant complete technical literature has to be enclosed with the offer.
- iv. For any contradictory points in the specifications and scope of supply, vendor shall refer to BCPL for clarification before submitting the offer.



SPECIFICATIONS	Accepted/ Not Accepted
Cable fault locating System supply must comprise of:	Bidder's Acceptance
1. 12KV portable fault finding system with integrated TDR, 1 nos.	
2. Surge wave receiver / cable fault pin-pointer, 1 nos. Complete with all accessories.	
Technical specification requirements are as follows:	Bidder's Acceptance
1. 12kv Portable fault finding system:	
12kv Portable fault finding system must be portable and self-contained. It must contain a suitable integrated controller cum surge generator and a suitable analyser capable of analysing pulse echo returns (TDR).	
➤ The system must have arc reflection capability (ARM) mode.	
➤ The unit should operate on AC power supply 230V and should Also run based on 12/24 V internal batteries (internal batteries should be provided as standard) built into the system to allow portable use.	
➤ Equipment should provide the following features :	
➤ Automatic fault locating procedure	
➤ Expert mode to guide the user where the users may not operate the unit on a regular basis, through the GUI.	
➤ Automatic end of cable and distance to fault location	
➤ Automatic breakdown detection.	
1.1 ARM and Surge (Thumping for pinpointing) mode	
1.1a Voltage Range up to 12 kV, Energy available 500 joules.	
1.1b 10 second charge rate for both the range setting	
1.2 Proof Mode	
1.2a The surge generator must be capable of generating up to 12kV continuously.	
1.2b The unit must have a built in proof timer, user defined / 1 – 60 minutes.	
1.2c The unit must provide metering display for leakage current.	
1.2d The unit could also measure mega ohm resistance after the proof testing.	
1.3 Controls and Control Panel	
1.3a All controls must be arranged in an easy-to-use orderly sequence, to make operation uncomplicated. All controls must be clearly marked. Interface should have user selectable languages.	
1.3b The unit should have Smart DIGITAL INTERFACE, which “pre-selects” the next logical step (can be overridden by customer) and the unit should have “Quick Steps” and a “Expert” Menu, which both customer could configure & use.	
1.4 Interlock system and safety systems (for automatic, safe shutdown and operator safety)	
1.4a The unit must be equipped with a “High Voltage Enabled” Indication.	
1.4b The unit must be configured so high voltage is not present until the user selects the high voltage to be energized.	



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1.4c The unit must provide an “external” high voltage key to prevent dangerous conditions when the HV circuits are energized.	
1.4d The unit must provide an emergency stop button located on the top panel for emergency stop.	
1.4e The unit should have built-in trouble shooting routine for technical service.	
1.5 Safe Discharging of Cable under test	
1.5a Automatic controlled shorting and grounding must be provided to guarantee that the cable under test is fully discharged and grounded safely when the escape button is pressed to the return position. The unit must also safely ground and discharge the cable and the HV bus if the panel on/off key is turned to the “OFF” position.	
1.6 Technical parameters required:	
a. Voltage Ranges : 12kV,	
b. Energy : 500 Joules	
c. control : via rotary control knob	
d. Prelocation : TDR:	
i. Sampling Rate: 100 Mhz or more	
ii. Range : 170000 feet / 52kms or more	
iii. Resolution: 2.5 ft @ 250 ft/fs	
iv. 0.8 m @ 80 m/μs	
v. Arc Reflection: 0 – 12 kV	
e. Impulse Sequence: 5 to 10 seconds, Single shot	
f. Display: size <=7 inches , Trans reflective TFT Color LCD 1280 x 800 pixel, Integrated.	
g. Memory : 100 or more traces	
h. Data interface : Via USB	
i. Cables : 15 feet cable set including earthing cable, HV test cable ; in addition main supply cable of minimum 5 feet length	
j. Internal Battery supply: Internal 24 V NiMH Rechargeable Battery 5 AH. k. AC Line: 100 – 230 VAC ±50/60 Hz	
k. Safety: instrument should include Emergency stop Key-switch Interlock , detection	
/indication Feature to check and show Safe Grounding.	
l. Environmental	
m. Operating Temperature: -20 ° to +50 °C	
n. Weight : Max 35 kgs	



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2. Surge wave receiver / cable fault pin-pointer:	
The cable fault locating kit should include supply of portable pin pointing instrument which should measure electromagnetic and acoustic signals associated with flashovers in cables. The instrument shall pinpoint the fault with direction when used in conjunction with surge generator for pin pointing of underground cable faults. Instrument should have following specification:	
1. The instrument shall pin point the fault with direction when used in conjunction with surge generator for pin pointing of underground cables faults by combination of acoustic and magnetic signal.	
The set should be portable and battery operated with a color LCD Display facility to indicate various parameters.	
For fault pin pointing the offered equipment should fulfill the following requirements: Fault location by the magnetic field and sound signal coincidence method with:	
– Consisting of a receiver and ground sensor with accessories, headphones, connection cables and transport box or mountings	
– High acoustic and magnetic field sensitivity	
– High performance electronic suppression of external noise and interference	
– Excellent acoustic characteristics (frequency range 100 Hz to 1.5 kHz)	
– Active ear protection by a 84 db (A) limiter or better.	
– Measurement of magnetic field and sound coincidence with automatic selection and calibration of the measuring range	
– Automatic contactless turn off of the Headset, as the hand approaches the handle	
– Indication of cable position in respect to the sensor through a compass displaying whether you are left or right to the cable and also angle of the cable running with respect to the sensor.	
– Indication of the direction to the fault .	
– Fault distance should be displayed in milliseconds, meters or feet.	
– Built in adjustable filters for the suppression of interference 270 Hz....1,5 kHz	
2.1 The detailed specifications are as follows:-	
Measuring Functions : Distance Measurement: Measurement of the magnetic field of strength of pulse current.	
Display : TFT Color Display 320 x 240 pixels.	
Coincidence Method : Acoustic /Magnetic.	
Frequency Range : 100Hz. to 1.0 kHz. (Acoustic) Amplification : acoustic > 65dB, Magnetic: > 50 dB Gain adjustment : Automatic	
Memory : 99 measurement points or more	
Environmental : IP54 for control unit, IP65 for ground microphone	
Power Supply : Commercially operated batteries, preferably R6, AA size sufficient to operate for at least 15 hours continuously.	
Weight : Control unit <=1kG . Microphone <=2.5kG.	



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Accessories to be provided:	
1. 5 KV insulation tester with PI and DAR function	
2. True RMS digital multimeter with ac/dc voltage range 1000V and ac/dc current range 20A	
3. Digital measuring wheel (rodrometer)	
4. 1 pair hand gloves	
Warranty of total system will be 12 months from date of supply or 18 months from date of commissioning whichever is earlier	
Training and demonstration:	
2 days free training and demonstration will be provided at customer site for the total system.	

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