



	8. Instrument should have capability of taking required action automatically after capturing desired signal and it should act like data saving in ASCII (excel) and MATLAB formats, image saving, measurement result saving, mail transmission, buzzer notification. After acting it should then get ready automatically to capture next event.		
	9. Instrument should have facility to online view the data in Software and do the Post Analysis.		
	10. History memory & Search function with storage & recall capacity up to 5000 waveforms		
	11. Waveform Analysis Function: Computation like +, -, x, binarization & shift.		
	12. Facility to capture waveforms with two different sampling rates.		
	13. It should have FFT for up Eight waveforms and data point should be up to 100K		
	14. Automatic waveform parameters measurements like Amp, Max, Min, High, Low, Avg, Mid, RMS, $\pm$ Overshoot, Freq, Rise, Fall, Period, Width, Duty, Pulse, Peak to Peak.		
	15. Instrument should have cycle statistic function for automatically measuring the waveform parameters once per cycle and perform statistical processing on the parameters		
	16. Waveform Cursor Measurement: Horizontal, Vertical, Marker, H & V, Degree		
	17. Display shall be minimum 12 inches or more, Color LCD display with touch panel with hard keys.		
	18. Instrument should have Dual Zoom facility to zoom the waveforms at two different positions at two different zooming rates.		

	19. Instrument should have facility of GO/NO-GO output when trigger level gets qualified.		
	20. Instrument should have facility to add & clear the traces of waveforms for comparison purpose.		
	21. Instrument should have dedicated Help Key which can allow user to browse the user manual		
	<b>General-</b>		
	1. Supply Voltage: 230 VAC, 50 Hz		
	2. Operating Temperature: Temperature: 10°C to 40°C		
	3. Humidity: 25 to 80%RH (no condensation)		
	4. Weight: Less than 10 kgs		
	5. Instrument should have facility for streaming measured data directly in its Internal Storage having capacity of 512 GB SSD.		
	6. Input Module should be as below,  a) Module Number 1: Voltage Module Should have 4 analog channels, which should be isolated from each other. Such isolation should allow user to feed 2 separate signals at a time & observe / capture it on instrument screen. Bandwidth: DC to 03 MHz Maximum Sampling Rate: Should be up to 10 MS/s  Vertical Resolution: 16 Bit. Input Coupling: AC, DC, GND Input Voltage Range: 5 mV/div to 20 V/div Maximum Input: 600V (DC + AC Peak) or higher. Connector Type: BNC type. Required Quantity of Modules: 01 No.		
	b) Module Number 2: Acceleration Module Should have 2 analog		

		<p>channels, which should be isolated from each other. Such isolation should allow user to feed 2 separate signals at a time &amp; observe / capture it on instrument screen.</p> <p>Bandwidth: Acceleration: 0.4 Hz to 40 kHz / Voltage: DC to 40 kHz</p> <p>Maximum Sampling Rate: Should be up to 100kS/s</p> <p>Vertical Resolution: 16 Bit.</p> <p>Input Coupling: AC, DC, ACCL (acceleration), and GND</p> <p>Input Voltage Range:</p> <p>Acceleration (<math>\pm 5 V = \times 1</math> range)</p> <p>X0.1 to <math>\times 1</math> to X100 (1-2-5 steps)</p> <p>/ Voltage: 5 mV/div to 10 V/div (1-2-5 steps) Maximum Input: 42 V (DC + AC Peak).</p> <p>Connector Type: BNC type.</p> <p>Required Quantity of Modules: 01 No.</p>		
		<p>c) Module Number 3: Strain Module with Bridge (DSUB, Shunt-Cal)</p> <p>Should have 2 channels, which should be isolated from each other. Such isolation should allow user to feed 2 separate signals at a time &amp; observe / capture it on instrument screen.</p> <p>Bandwidth: Acceleration: 20kHz</p> <p>Maximum Sampling Rate: Should be up to 100kS/s</p> <p>Vertical Resolution: 16 Bit.</p> <p>Input Voltage Range: mV/V range = <math>0.5 \times (\mu\text{STR range}/1000)</math></p> <p>Bridge Head Type 1 - (D-Sub 120 <math>\Omega</math>, with a 5m cable)</p> <p>Bridge Head Type 2 - (D-Sub 350 <math>\Omega</math>, with a 5m cable)</p> <p>Bridge voltage Select from 2 V, 5 V, and 10 V.</p> <p>Gauge resistance 120 <math>\Omega</math> to 1000 <math>\Omega</math> (bridge voltage: 2 V) 350 <math>\Omega</math> to 1000 <math>\Omega</math> (bridge voltage: 2 V, 5 V, and 10 V)</p> <p>Maximum Input: 42 V (DC + AC Peak).</p> <p>Connector Type: 9-pin D-Sub connector (female)</p> <p>Required Quantity of Modules: 01 No.</p>		

		<p>d) Module Number 4: Temperature Module Should have 16 channels, which should be isolated from each other. Such isolation should allow user to feed 16 separate signals at a time &amp; observe / capture it on instrument screen with a Box to connect 16 Thermocouples.  Bandwidth: Acceleration: 600 Hz  Maximum Sampling Rate: Should be up to 10S/s  Vertical Resolution: 16 Bit.  Input Voltage Range: 1 mV/div to 2 V/div  Input Coupling: TC (thermocouple), DC, GND  Maximum Input: 20 V (DC + AC Peak).  Connector Type: Screw type, External mounting</p> <p>Required Quantity of Modules: 01 No. with 01 No. Mounting Box for TC.</p> <p>1:1 BNC to BNC Cables  It should be safety BNC to safety BNC type. It should be able to handle maximum input voltage up to 1000 Vrms- CAT II  Cable Length should be more than 2 meter.  Required Quantity: 02 Nos.</p> <p>10:1 Isolated Passive Probes  Bandwidth: DC to 100 MHz (-3dB)  Attenuation ratio: 10:1  Connector Type: Isolated BNC  Input Resistance: 10M Ω  Input Capacitance: 18pF  Required Quantity: 10 Nos.</p> <p>Software with permanent license to be supplied for PC communication, Remote Monitoring &amp; Operation, Off line waveform display &amp; analysis and data transfer to PC.</p>		
		<p><b><u>GENERAL TERMS AND CONDITIONS –</u></b></p> <p>1. <b><u>Eligibility-</u></b>  The supplier should provide the machine of make Yokogawa or substantially equivalent.</p>		
		<p>2. <b><u>Installation and Training –</u></b>  The supplier shall be responsible for the complete installation, commissioning</p>		

		<p>and demonstration of the system within one (1) week from the delivery of the machine.</p> <p>The supplier shall provide one (1) day on site training free of cost.</p>		
		<p><b>3. <u>Warranty –</u></b> A comprehensive warranty shall be provided for a period of <b>one (1) year</b> from the date of successful installation and commissioning.</p>		
		<p><b>4.</b> Instrument should be a single cabinet type, standalone product suitable for critical, outdoor jobs. It should not be an assembled / custom built type test system using industrial PC or similar hardware.</p>		
		<p><b>5.</b> The operating system of instrument should not be based on windows or linux as these are prone to virus.</p>		
		<p><b>6. <u>Payment Terms –</u></b>  100% payment shall be made within 30 days by ICICI Foundation on behalf of IIT Bombay after successful delivery and installation at the specified location.</p>		