Appendix-I

Sr. No.	Name of the item with Specification:	Quantity
	Data Acquisition System:	
(1)	The Data Acquisition System shall have capacity of taking 16 Nos. Universal Input Channels (4-wire configuration). It shall also be able to support channel expansion modules up to at least additional 32 channels. Universal channel to allow the same terminals to be used for different type of sensors.	1 No.
(2)	**Input Sensor Support:** • Shall be capable to take inputs from all sensors types having output as voltage, current, resistance, pulse, digital, etc. without any extra signal conditioning requirements. • Shall be able to directly take inputs from Sensors such as load cells, LVDT/LDT/Potentiometric displacement transducers, earth pressure cells, pressure transducers, pore pressure transducers, strain gauges (¼, ½ & full bridge), etc. • Accuracy 0.1% and Linearity 0.01 %	
(3)	Shall support at least 8 channel strain conditioner for ¼, ½ & full bridge configuration preferably without any excitation or any additional resistor for bridge formation. If any excitation / additional resistor / compensation device is required, it shall be included as a part of the system.	
(4)	Data acquisition input: 0-10 V; 0-20 mA; 4-20 mA; 2-20mV, etc.	
(5)	Sampling resolution of 131,000 points or higher.	
(6)	Sampling Rate : 25 Hz or higher per channel (25 data points or higher per second per channel)	
(7)	Shall have at least 1 No. latching relay output	
(8)	Proper isolation between different input channels	
(9)	Shall allow to perform various tests in parallel, with each channel having independent clock and logging mode	
(10)	Internal Data Storage Capacity: At least 128 MB and possibility to expand using USB drive. Alternatively possibility to connect a removable USB drive for data storage (should be programmable directly from the USB device.)	
(11)	Communication Interfaces LAN / Ethernet, USB, Serial	

(12)	Display and Operating features of system: • Display and keypad / touch screen • Display Functions: channel data, alarms, system status • Shall work on AC Power, internal / external battery power (any battery if required, shall be included in the system) • Strain configurations based on gauge factor and bridge type	
(13)	Software Requirements: • Built-in software / licenced software provided with the data acquisition system. A copy of software and the user manual shall be supplied in USB drive • All sensors' configuration supported through the software • Real time numerical and graphical display of readings through the software • Access to live and historical data • Capable of preparing various data charts and tables' view • Capability to extract the data to excel or excel compatible formats • Password Protection for Calibration and Hardware Configuration	
(14)	Channel expansion module with following features: • Shall have at least 8 channels (4-wire configuration) • Analogue input channels shall support sensors as mentioned in input sensor support (point no. 2) • The channel expansion module should be powered directly from the main data logger unit • Shall have indicator / warning and troubleshooting aid	1 No.
(15)	The supplied unit shall be portable. All necessary tool kit, cables, safety/protection case, etc. shall be supplied with the data acquisition system.	
(16)	Operating Conditions: Operating Temperature range: -10°C to 60°C Humidity: 85% RH, non-condensing	
(17)	Power supply: 110-220 V, 50-60 Hz, 1-phase, with provision of necessary safety measure for voltage fluctuation	
(18)	Warranty: Minimum 3 Years on Complete Data Acquisition System	