

Specification for Strain Signal Conditioner

Sl No.	Item Description	Quantity (Nos.)
1.	32-Channels Strain Signal Conditioner	1

Sl. No.	Parameters	Specifications
1.	Total number of channels	32 (vendor can supply multiple unit to meet the 32 Channel count)
2.	Input	
	2.1 Strain gauges	<ul style="list-style-type: none"> • Quarter, half, or full bridge of 120 Ω and 350 Ω strain gauges. Selectable bridge completion for 120 Ω and 350 Ω quarter and half bridge configurations. • Should support full bridge transducers from 100 Ω to 1000 Ω. • Should support 4-wire connections for quarter bridge configuration
	2.2 Analog input	+ 10 V with input protection voltage of +30V or better.
3.	Excitation	
	3.1 Constant voltage	Programmable for 0.5 to 10V _{dc} and settable to 2.5V, 5V & 10V.
	3.2 Excitation voltage accuracy	Better than 0.3% of setting
4.	Bridge Balance	
	4.1 Balance range	100% of measurement range
	4.2 Auto balance	To be provided
5.	Shunt Calibration	
	5.1. Internal Shunt resistor	Built in Two Shunt Resistors: 59.88 k Ω & 175 k Ω (to simulate 120 Ω & 350 Ω strain gauges)
6.	Amplifier Transfer Characteristics	
	6.1 Frequency response	DC to 40 kHz (-3dB) or better
	6.2 Input impedance	≥ 10 M Ω
	6.3 Common mode voltage	± 350 V
	6.4 Common mode rejection	> 90 dB at DC
	6.5 Gain	1 to 10000
	6.6 Noise	< 1mV @10V output voltage range with 5Hz-10kHz frequency bandwidth
7.	Output	
	7.1 Voltage	± 5 V or higher
	7.2 Linearity	$\pm 0.1\%$
	7.3 Output connectors	BNC connectors

8.	Remote Programmability	
	8.1 Remote Programmability	Settings for individual channels and status monitoring from PC through Ethernet/RS-232 interface with user friendly GUI. Required interface cable of 25m must be provided. The computer typically should have the following specifications
	8.2 Host Computer and operating system (Quantity: 1 No.)	<ul style="list-style-type: none"> • Host computers to set-up signal conditioner units. • The Computer should have a reliable Operating system supporting the interface software for the signal conditioner unit. • Operational requirement of host computer will take precedence over the specification from serial no. 8.3 to 8.12.
	8.3 Processor	11 th Gen Intel Core i7 or better
	8.4 RAM	16GB, DDR4, 2666MHz or better
	8.5 Hard Disk	1TB HDD data disk and 500GB SSD for OS & other application software.
	8.6 Monitor	One 24” full HD TFT LED monitor or better
	8.7 I/O ports	<ul style="list-style-type: none"> • USB ports ver. 2.0 – minimum of 4 nos. • USB ports ver. 3.0 – minimum of 2 nos. • RS232 interface ports – minimum of 2 nos.
	8.8 Pointing Device	Optical mouse.
	8.9 Keyboard	Standard keyboard with 104 keys or better.
	8.10 Networking	1 Gbps Ethernet port. (In case, the signal conditioner system uses Ethernet port to communicate to PC for parameter settings, additional 1Gbps Ethernet port to be provided for connecting to the local intranet.)
	8.11 Additional PCI Slots	<ul style="list-style-type: none"> • PCI X16 - 1 slot • PCI 1X or better - 1 slot
	8.12 Operating System	64-bit windows-10 or better latest professional version with OEM perpetual license
9.	Construction	
	9.1 Enclosure	19” rack compatible enclosure. The ventilation should be sufficient enough to operate the system in the same rack even in the presence of other equipment.
	9.2 Input connections	Individual connectors for each input channel. If multiple inputs are connected through a common connector, an input break out box (19” rack mountable) with suitable connectors for individual channels should be supplied.
	9.3 Output connections	BNC connectors for individual channels. If multiple inputs are connected through a common connector, an input break out box (19” rack

		mountable) with suitable connectors for individual channels should be supplied.
10.	Others	
	10.1 Operation/Service Manual	Operation/Service manual with schematic diagram should be provided.
	10.2 Rack Mounting	Strain Signal Conditioner unit should be mounted in standard 19" rack compatible enclosure with necessary mounting kits.
	10.3 Operating Temperature	0°C to 40°C
	10.4 Input power	220- 230 V AC, 1 ϕ , 50 Hz Power distribution module to connect to standard 15A Indian socket should be provided.
	10.5 Warranty	One-year warranty to be provided from the date of acceptance of the system.
	10.6 Installation and Training	The system shall be installed at U R Rao Satellite Centre (URSC), Bengaluru and demonstrated for the full performance specifications. The supplier shall provide training to ISRO personnel for operation and maintenance of the supplied system.
	10.7 Demonstration	a) System should be demonstrated for the indented specifications for the purpose of technical evaluation with at least one unit/channel/module of the quoted item. b) The model of the item used for demonstration must be the same as the model quoted by the vendor If the above two conditions are not satisfied, quoted item will be considered as technically not suitable. Demonstration may be given by the vendor at URSC, Bengaluru OR on-line through mutually agreed video conference mode.
	10.8 Tentative Delivery Period	One year from the receipt of technically and commercially acceptable purchase order.

Note:

1. This is two-part ISRO EGPS tender viz. Technical Part and Price Part.
2. Caution: Price information of any kind should not be included in the technical part of the EGPS or in the uploaded documents of the technical part of the bid. **If any price information is revealed in technical part, such Bids will be disqualified.**