Rajasthan Technical University

Akelgarh, Rawatbhata Road, Kota-324010

INVITATION LETTER

Package Code: TEQIP-III/RJ/rtur/30
Package Name: Advance Drives Setup

Current Date: 29-Jun-2019
Method: Shopping Goods

To,

Sub: INVITATION LETTER FOR Advance Drives Setup

Dear Sir,

Sr. No	Item Name	Quantity	Place of Delivery	Installation Requirement (if any)
1	FPGA based controller	3	Coordinator, TEQIP-III RTU (ATU) Office of TEQIP-III, First Floor, VC Secretariat, Rajasthan Technical University, Rawatbhata Road, Akelgarh, Kota-324010 (Raj.)	YES
2	BLDC Motor Control	1	Coordinator, TEQIP-III RTU (ATU) Office of TEQIP-III, First Floor, VC Secretariat, Rajasthan Technical University, Rawatbhata Road, Akelgarh, Kota-324010 (Raj.)	YES
3	Induction Motor Control	1	Coordinator, TEQIP-III RTU (ATU) Office of TEQIP-III, First Floor, VC Secretariat, Rajasthan Technical University, Rawatbhata Road, Akelgarh, Kota-324010 (Raj.)	YES
4	PMSM Motor Control	1	Coordinator, TEQIP-III RTU (ATU) Office of TEQIP-III, First Floor, VC Secretariat, Rajasthan Technical University, Rawatbhata Road, Akelgarh, Kota-324010 (Raj.)	YES
5	DC Motor Control Module-Chopper fed	1	Coordinator, TEQIP-III RTU (ATU) Office of TEQIP-III, First Floor, VC Secretariat, Rajasthan Technical University, Rawatbhata Road, Akelgarh, Kota-324010 (Raj.)	YES
6	SRM Motor Control Module	1	Coordinator, TEQIP-III RTU (ATU) Office of TEQIP-III, First Floor, VC Secretariat, Rajasthan Technical University, Rawatbhata Road, Akelgarh, Kota-324010 (Raj.)	YES

2.		Government of India has received a credit from the International Development Association (IDA) towards the cost of the **Technical Education Quality Improvement Programme [TEQIP]-Phase III** Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this invitation for quotations is issued.
3.		Quotation
	3.1	The contract shall be for the full quantity as described above.
	3.2	Corrections, if any, shall be made by crossing out, initialling, dating and re writing.
	3.3	All duties and other levies payable by the supplier under the contract shall be included in the unit price
	3.4	Applicable taxes shall be quoted separately for all items.
	3.5	The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
	3.6	The Prices should be quoted in Indian Rupees only.
4.		Each bidder shall submit only one quotation.
5.		Quotation shall remain valid for a period not less than 60days after the last date of quotation submission.
6.		Evaluation of Quotations: The Purchaser will evaluate and compare the quotations determined to be substantially responsive i.e. which
	6.1	are properly signed; and
	6.2	Confirm to the terms and conditions, and specifications.
7.		The Quotations would be evaluated for all items together
8.		Award of contract: The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price.
	8.1	Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of contract.
	8.2	The bidder whose bid is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be incorporated in the purchase order.
9.		Payment shall be made in Indian Rupees as follows: **Satisfactory Delivery & Installation - 10% of total cost (September 28, 2019)** **Satisfactory Acceptance - 90% of total cost (September 28, 2019)**
10.		Liquidated Damages will be applied: • Liquidated Damages Per Day Min % : 0.1 • Liquidated Damages Max % : 10
11.		All supplied items are under warranty of **12** months from the date of successful acceptance of items and AMC/Others is **Not Required.**.
12.		The items covered under this invitation are required to be delivered & installed at RTU Kota within 60 days from the date of issue of Purchase Order.
13.		*The sealed bid, complete in all respects, must reach, Coordinator, TEQIP-III, RTU (ATU), VC Secretariat, Rajasthan Technical University, Rawatbhata Road, Akelgarh, Kota-324010 latest by 19 July 2019 up to 16:00 hrs., failing which it would be summarily rejected. RTU will not be responsible for postal delay or non-receipt of quotation.*

14.	The quotation would be opened on *19 July 2019* at *16:00 hrs.* at *Coordinator, TEQIP-III, RTU (ATU), VC Secretariat, Rajasthan Technical University, Rawatbhata Road, Akelgarh, Kota-324010* in the presence of bidder representatives who choose to attend the opening. The bidder representatives who are present shall sign an Attendance sheet evidencing their attendance.
15.	Bidder must quote the Financial Rate strictly as per financial Quotation format provided at **Annexure-IV.**
16.	Detailed specifications of the items are at **Annexure-I**.
17.	Training Clause (if any) **YES**
18.	The bidders must provide a certificate indicating their adherence to all the clauses of the bid as per format in **Annexure-II**
19.	The bidders must provide a Technical Compliance Report per format in **Annexure-III**
20.	Testing/Installation Clause (if any) **YES**
21.	Performance Security shall be applicable: **10%** It should be valid till 30 days after expiry of warranty period of one year and agreement signed within 15 days from the date of issue of purchase order.
22.	To ensure the price justification of the above proprietary item, bidder shall attach copies of the similar nature of recent purchase orders (minimum two) preferably issued by the government /semi government institutions / autonomous bodies.
23.	Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly Indicating the model quoted for
24.	We look forward to receiving your quotation and thank you for your interest in this project.

(Authorized Signatory)

Name & Designation

Coordinator, TEQIP-III **(ATU)**
Rajasthan Technical University
Kota (Rajasthan)

Sr. No	Item Name	Specifications
1	FPGA based controller	**Wavect Controller : 3 Qty** FPGA Board details Xilinx FPGA Zynq™-7000 SoC XC7Z020-CLG484-1with Dual ARM® Cortex™-A9 MPCore™ capable Up to 667 MHz operation along with NEON™ Processing / FPU Engines. Memory allocation in the board is 512 MB DDR3 and 256 Mb Quad-SPI Flash with Full size SD/MMC card cage with 4 GB SD card. Communication with the board through 10/100/1000 Ethernet(Isolated). ZedBoard is a CE and RoHS certified FPGA board. Hardware Default Configuration Isolated Voltage (4) and current (4) sensors for feedback Voltage +/- 0-1000V AC/DC measurement and output is instantaneous & signal conditioned 0-3.3V DC Current Sensor 0-25 AC/DC measurement and output is instantaneous & signal conditioned 0-3.3V DC Dual, 200KSPS-1MSPS 16 bit 4x2 channel Simultaneous sampling for ADC for sensors alone. PWM Card 3.3/5 to 15 V Level Shifting of 12x1 PWM Out with optical isolation. Dedicated I/O with for encoder and Hall sensors with 5V supply and Differential noise reduction. 4 Digital Input which can take 3.3V/5V input to FPGA. 230V, 5A, 4 numbers of NO-NC Contactor Relay for HV Driving purpose. **Wavect Software : 3 Users** Real time capturing Real time capturing and plot up to 32 Channels in 200 ksps rate with buffering option up to 60sec, that includes voltage (4) & current (4) analogue signals and additional add-on card's data along with viewing probes for application algorithm using which logic can be probed. Up to 32 virtual input/output for control monitoring of digital controller signal. Real time storage/buffer storage of data for post analysis and data exporting provision to .png/CSV file format. Gigabit Ethernet communication with the board for programming, controlling, monitoring and capturing at high data R/W rate. Real time display of power vector diagram with detailed running statistics. FFT analysis of the Voltage and current waveform in both Scope mode and programed mode. Scope mode with voltage and current measuring. Individual panel for solar and drive. Dashboard arrangement for experiment setups. Tcl command support for writing values to a file.

		Xilinx System generator, Entuple library modules in Matlab for control applications. Matlab integration for captured data analysis. Note: Direct link to Matlab Simulink software. Capability to make the algorithm schematically in Simulink environment using the System generator tool box in Simulink and transfer the code to the controller for hardware implementation. Sensor outputs are available as schematic blocks making ADC and sensor interfacing simplified. Library Blocks Building blocks for BLDC motor control like PI controller, Carrier wave, Sinusoidal wave etc. will be provided with the module. These blocks are open and editable.
2	BLDC Motor Control	BLDC Motor Control Module:one set BLDC Motor Details 0.746 KW, 1 HP,320 V,1800 rpm, Brushless DC motor with 1000 ppr Incremental Encoder for Speed Feedback and Mechanical Loading arrangement (Brake Drum) along with required power supplies for Sensors and shielded cables for motor terminals. **(ii) Three phase IGBT based Inverter details (Rectifier + Inverter + Brake Chopper)** General Specifications I/P AC Voltage: - 415 Volt DC Voltage: - 600 Volt O/P AC Voltage: - 415 Volt O/P AC Current 30 Amp Switching Frequency upto20 kHz Fundamental Frequency 50 Hz Type of Cooling: - Forced Air Ambient Temp: - 40 Deg Duty Class: - Class I Cooling Method Forced Air Cooled. IGBT Details V-IGBT=6. Generation Trench V-IGBT CAL4= Soft switching 4 Generation CAL-diode. Isolated copper baseplate using DCB technology (Direct Copper Bonding). Increased power cycling capability. With integrated gate resistor. Low switching losses at high di/dt. Bridge Module Three phase bridge rectifier Blocking voltage of 1600 V High surge current carrying capability Large isolated base plate & Easy mounting Gate Driver

It should interface and isolate the Control Unit/Primary Circuit from the secondary which is directly connected to the high power.

Gate Driver controls the IGBT's dynamic behavior and its short circuit protection.

Input signal level is 0/15V.

Interlocking time between the input signals is 3μs.

It monitors the errors: power supply under-voltage (below 13.3 V), short-circuit between Collector and Emitter. The error reset time is typically 9μs.

On detection of error/fault, the Gate Driver switches off the IGBT.

The IGBT switching speed may be adjusted by the resistors RGON and RGOFF.

The two parameters (Rce, Cce) define the values and time delays for the comparison of an internal reference with the monitored value of Vce(sat).

Kit Details

3-phase teaching kit consists of 3-phase uncontrolled rectifier and 3-phase IGBT based controlled Inverter. It should also have a brake chopper.

3-phase 415 V input is applied to the uncontrolled rectifier (SKD100/16) using an autotransformer

The dc output of the Rectifier is given to the input of the IGBT based inverter.

DC capacitor bank is connected in between the rectifier and inverter as source to the inverter.

3 phase 415 V ac Output is achieved from the inverter and is provided for the Motor Interface.

Driver is the interface unit between the power module and controller.

Each Driver drives 2 switches in a Module.

+15V/0V supply is given to Vs and GND. Alternate ON/OFF pulses of +15V are given to Vin1 and Vin2.

Vin1 corresponds to TOP IGBT and Vin2 corresponds to BOTTOM IGBT.

ERROR is triggered when Vs falls below 13.3 V and Short circuit of IGBT.

ERROR output is taken to the controller for turning off the system during occurrence of the error.

Capacitor & Snubber

Rectified DC input is given to electrolytic filtering capacitors.

Each capacitor is 4700 μF / 450 V.

2 capacitors are connected in series to have equivalent capacitance of 2350 μF / 900 V.

Resistors of value 27 k / 20 W are connected across each capacitor for voltage balancing.

Snubber Capacitors of 0.22 μF / 1500 Vdc (4 nos) are connected across the dc link for voltage overshoot protection.

The snubbers limit the over-voltages during commutations and as a consequence reduce the losses.

They are kept very close to the device to reduce the inductance between the switches and the capacitors.

Cooling

Teaching kit stack assembly is provided with forced air cooling.

IGBT modules are mounted on 250 mm heat sink (extruded type).

Forced air-cooling is provided by Hi Cool Fan. 230VAC 1ph. should be applied to the Fan input terminals provided on the unit.

		Flow of air is 3 m/s. Input to the fan is 1-Φ 230 V Supply Thermal Protection Normally Closed Thermal contact switch is used for protection against thermal runaway. The position of the thermal switch normally closed when its temperature is below the threshold temperature (80 deg C) & it changes to normally open above 80 deg C. After cooling down, it again retains it normally closed position. Thermal switch is placed at the warmest point on the heat sink. (iii) Integration With Module (A) and Software + Installation + Onsite Training + 1 year Warranty
3	Induction Motor Control	**Induction Motor Control Module: 1 Set** (i) Three phase 2 HP Induction Motor 1.5 KW, 2 HP, 415 V, 1420 rpm, three phase induction motor with 1024 ppr Incremental Encoder connected externally for speed feedback , Mechanical Loading arrangement (Brake Drum) provided along with required power supplies for Sensors and shielded cables for motor terminals. (ii) Three Phase 2 Level IGBT Based Inverter Stack **Three phase IGBT based Inverter details (Rectifier + Inverter + Brake Chopper)** General Specifications I/P AC Voltage: - 415 Volt DC Voltage: - 600 Volt O/P AC Voltage: - 415 Volt O/P AC Current 30 Amp Switching Frequency upto20 kHz Fundamental Frequency 50 Hz Type of Cooling: - Forced Air Ambient Temp: - 40 Deg Duty Class: - Class I Cooling Method Forced Air Cooled. IGBT Details V-IGBT=6. Generation Trench V-IGBT CAL4= Soft switching 4 Generation CAL-diode. Isolated copper baseplate using DCB technology (Direct Copper Bonding). Increased power cycling capability. With integrated gate resistor. Low switching losses at high di/dt. Bridge Module Three phase bridge rectifier Blocking voltage of 1600 V High surge current carrying capability Large isolated base plate & Easy mounting Gate Driver It should interface and isolate the Control Unit/Primary Circuit from the secondary which is directly connected to the high power.

Gate Driver controls the IGBT's dynamic behavior and its short circuit protection.

Input signal level is 0/15V.

Interlocking time between the input signals is 3µs.

It monitors the errors: power supply under-voltage (below 13.3 V), short-circuit between Collector and Emitter. The error reset time is typically 9µs.

On detection of error/fault, the Gate Driver switches off the IGBT.

The IGBT switching speed may be adjusted by the resistors RGON and RGOFF.

The two parameters (Rce, Cce) define the values and time delays for the comparison of an internal reference with the monitored value of Vce(sat).

Kit Details

3-phase teaching kit consists of 3-phase uncontrolled rectifier and 3-phase IGBT based controlled Inverter. It should also have a brake chopper.

3-phase 415 V input is applied to the uncontrolled rectifier (SKD100/16) using an autotransformer

The dc output of the Rectifier is given to the input of the IGBT based inverter. DC capacitor bank is connected in between the rectifier and inverter as source to the inverter.

3 phase 415 V ac Output is achieved from the inverter and is provided for the Motor Interface.

Driver is the interface unit between the power module and controller.

Each Driver drives 2 switches in a Module.

+15V/0V supply is given to Vs and GND. Alternate ON/OFF pulses of +15V are given to Vin1 and Vin2.

Vin1 corresponds to TOP IGBT and Vin2 corresponds to BOTTOM IGBT.

ERROR is triggered when Vs falls below 13.3 V and Short circuit of IGBT. ERROR output is taken to the controller for turning off the system during occurrence of the error.

Capacitor & Snubber

Rectified DC input is given to electrolytic filtering capacitors.

Each capacitor is 4700 µF / 450 V.

2 capacitors are connected in series to have equivalent capacitance of 2350 µF / 900 V.

Resistors of value 27 k / 20 W are connected across each capacitor for voltage balancing.

Snubber Capacitors of 0.22 µF / 1500 Vdc (4 nos) are connected across the dc link for voltage overshoot protection.

The snubbers limit the over-voltages during commutations and as a consequence reduce the losses.

They are kept very close to the device to reduce the inductance between the switches and the capacitors.

Cooling

Teaching kit stack assembly is provided with forced air cooling.

IGBT modules are mounted on 250 mm heat sink (extruded type).

Forced air-cooling is provided by Hi Cool Fan. 230VAC 1ph. should be applied to the Fan input terminals provided on the unit.

Flow of air is 3 m/s.

Input to the fan is 1-Φ 230 V Supply

Thermal Protection

		Normally Closed Thermal contact switch is used for protection against thermal runaway.
		The position of the thermal switch normally closed when its temperature is below the threshold temperature (80 deg C) & it changes to normally open above 80 deg C.
		After cooling down, it again retains it normally closed position.
		Thermal switch is placed at the warmest point on the heat sink.
		(iii) Integration With Module (A) and Software + Installation + Onsite Training + 1 year Warranty
4	PMSM Motor Control	**PMSM Motor Control Module: 1 Set** (i) PMSM Motor 1.07 KW, 1.435 HP, 300 V, 4000 rpm, Permanent magnet synchronous motor with 2500 ppr Incremental Encoder for Speed Feedback and Mechanical Loading arrangement (Brake Drum) along with required power supplies for Sensors and shielded cables for motor terminals. (ii) **Three phase IGBT based Inverter details (Rectifier + Inverter + Brake Chopper)** Specifications as above in Module B(ii) (iii) Integration With Module (A) and Software + Installation + Onsite Training + 1 year Warranty
5	DC Motor Control Module-Chopper fed	**DC Motor Control Module-Chopper fed: 1 set** (i) **DC Motor Details** 2.5KW,220 V, 13 A, 1500 rpm Separately excited DC Shunt machine with Mechanical loading (brake drum) and incremental encoder of 1024 ppr along with shielded cables for motor terminals (ii) **Three phase IGBT based Inverter details (Rectifier + Inverter + Brake Chopper)** General Specifications I/P AC Voltage: - 415 Volt DC Voltage: - 600 Volt O/P AC Voltage: - 415 Volt O/P AC Current 30 Amp Switching Frequency upto20 kHz Fundamental Frequency 50 Hz Type of Cooling: - Forced Air Ambient Temp: - 40 Deg Duty Class: - Class I Cooling Method Forced Air Cooled. IGBT Details V-IGBT=6. Generation Trench V-IGBT CAL4= Soft switching 4 Generation CAL-diode. Isolated copper baseplate using DCB technology (Direct Copper Bonding). Increased power cycling capability. With integrated gate resistor. Low switching losses at high di/dt.

Bridge Module

Three phase bridge rectifier

Blocking voltage of 1600 V

High surge current carrying capability

Large isolated base plate & Easy mounting

Gate Driver

It should interface and isolate the Control Unit/Primary Circuit from the secondary which is directly connected to the high power.

Gate Driver controls the IGBT's dynamic behavior and its short circuit protection.

Input signal level is 0/15V.

Interlocking time between the input signals is 3µs.

It monitors the errors: power supply under-voltage (below 13.3 V), short-circuit between Collector and Emitter. The error reset time is typically 9µs.

On detection of error/fault, the Gate Driver switches off the IGBT.

The IGBT switching speed may be adjusted by the resistors RGON and RGOFF.

The two parameters (Rce, Cce) define the values and time delays for the comparison of an internal reference with the monitored value of Vce(sat).

Kit Details

3-phase teaching kit consists of 3-phase uncontrolled rectifier and 3-phase IGBT based controlled Inverter. It should also have a brake chopper.

3-phase 415 V input is applied to the uncontrolled rectifier (SKD100/16) using an autotransformer

The dc output of the Rectifier is given to the input of the IGBT based inverter. DC capacitor bank is connected in between the rectifier and inverter as source to the inverter.

3 phase 415 V ac Output is achieved from the inverter and is provided for the Motor Interface.

Driver is the interface unit between the power module and controller.

Each Driver drives 2 switches in a Module.

+15V/0V supply is given to Vs and GND. Alternate ON/OFF pulses of +15V are given to Vin1 and Vin2.

Vin1 corresponds to TOP IGBT and Vin2 corresponds to BOTTOM IGBT.

ERROR is triggered when Vs falls below 13.3 V and Short circuit of IGBT. ERROR output is taken to the controller for turning off the system during occurrence of the error.

Capacitor & Snubber

Rectified DC input is given to electrolytic filtering capacitors.

Each capacitor is 4700 µF / 450 V.

2 capacitors are connected in series to have equivalent capacitance of 2350 µF / 900 V.

Resistors of value 27 k / 20 W are connected across each capacitor for voltage balancing.

Snubber Capacitors of 0.22 µF / 1500 Vdc (4 nos) are connected across the dc link for voltage overshoot protection.

The snubbers limit the over-voltages during commutations and as a consequence reduce the losses.

They are kept very close to the device to reduce the inductance between the switches and the capacitors.

		Cooling

Teaching kit stack assembly is provided with forced air cooling.

IGBT modules are mounted on 250 mm heat sink (extruded type).

Forced air-cooling is provided by Hi Cool Fan. 230VAC 1ph. should be applied to the Fan input terminals provided on the unit.

Flow of air is 3 m/s.

Input to the fan is 1-Φ 230 V Supply

Thermal Protection

Normally Closed Thermal contact switch is used for protection against thermal runaway.

The position of the thermal switch normally closed when its temperature is below the threshold temperature (80 deg C) & it changes to normally open above 80 deg C.

After cooling down, it again retains it normally closed position.

Thermal switch is placed at the warmest point on the heat sink.

Integration With Module (A) and Software + Installation + Onsite Training + 1 year Warranty

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6 SRM Motor Control Module

SRM Motor Control Module:1 Set

SRM Motor Details

Four phase,2.2 KW, 3 HP,230 V,3000 rpm, Switched Reluctance motor (Motor type: 8/6) with 1024 ppr Incremental Encoder connected externally for Speed Feedback and Mechanical Loading arrangement (Brake Drum) along with required power supplies for Sensors and shielded cables for motor terminals.

Four phase IGBT based Inverter details (Rectifier + Inverter)

General Specifications

Input AC Voltage =415 V

DC Voltage Vdc = 600 V

Output AC Voltage Vac = 415 V 4-Φ

Output Frequency Fac = 50 Hz

Output AC current Iac = 14 A

Switching Frequency Fsw = Upto 10 kHz

Ambient Temperature Tamb = 40 deg C.

Cooling Method Forced Air Cooled.

IGBT Details

V-IGBT=6. Generation Trench V-IGBT

CAL4= Soft switching 4 Generation CAL-diode.

Isolated copper baseplate using DCB technology (Direct Copper Bonding).

Increased power cycling capability.

With integrated gate resistor.

Low switching losses at high di/dt.

Bridge Module

Three phase bridge rectifier

Blocking voltage of 1600 V

High surge current carrying capability

Large isolated base plate & Easy mounting

Gate Driver

It should interface and isolate the Control Unit/Primary Circuit from the secondary which is directly connected to the high power.

Gate Driver controls the IGBT's dynamic behavior and its short circuit protection.

Input signal level is 0/15V.

Interlocking time between the input signals is 3µs.

It monitors the errors: power supply under-voltage (below 13.3 V), short-circuit between Collector and Emitter. The error reset time is typically 9µs.

On detection of error/fault, the Gate Driver switches off the IGBT.

The IGBT switching speed may be adjusted by the resistors RGON and RGOFF.

The two parameters (Rce, Cce) define the values and time delays for the comparison of an internal reference with the monitored value of Vce(sat).

Kit Details

Teaching kit consists of 3-phase uncontrolled rectifier and 4-phase IGBT based controlled Inverter.

3-phase 415 V input is applied to the uncontrolled rectifier

The dc output of the Rectifier is given to the input of the IGBT based inverter.

DC capacitor bank is connected in between the rectifier and inverter as source to the inverter.

4 phase 300 V Output is achieved from the inverter and is provided for the Motor Interface.

ERROR is triggered when Vs falls below 13.3 V and Short circuit of IGBT.

ERROR output is taken to the controller for turning off the system during occurrence of the error.

Capacitor &Snubber

Rectified DC input is given to electrolytic filtering capacitors.

2 capacitors are connected in series to have equivalent capacitance

Resistors are connected across each capacitor for voltage balancing.

Snubber Capacitors (4 nos) are connected across the dc link for voltage overshoot protection.

The snubbers limit the over-voltages during commutations and as a consequence reduce the losses.

They are kept very close to the device to reduce the inductance between the switches and the capacitors.

Cooling

Teaching kit stack assembly is provided with forced air cooling.

IGBT modules are mounted on 250 mm heat sink (extruded type).

Forced air-cooling is provided by Hi Cool Fan. 230VAC 1ph. should be applied to the Fan input terminals provided on the unit.

Flow of air is 3 m/s.

Input to the fan is 1-Φ 230 V Supply

Thermal Protection

Normally Closed Thermal contact switch is used for protection against thermal runaway.

The position of the thermal switch normally closed when its temperature is below the threshold temperature (70 deg C) & it changes to normally open above 70 deg C.

After cooling down, it again retains it normally closed position.

Thermal switch is placed at the warmest point on the heat sink.

| | | Integration With Module (A) and Software + Installation + Onsite Training + 1 year Warranty |

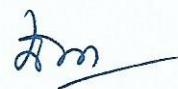**COMPLIANCE STATEMENT FOR VARIOUS CLAUSES IN BID**

Package No.-----------------------

S. No.	Clause mentioned in Invitation letter	Please mention Agreed /Not Agreed	Remarks
1.	Payment Terms		
2.	Delivery Period – 60 days		
3.	Warranty – 12 Months		
4.	Bid Validity – 60 days		
5.	Training		
6.	Testing/ Commissioning/ Installation included		

Signature of Supplier

Name: _____

Address: _____

Contact No: _____

TECHNICAL COMPLIANCE STATEMENT

Package No.------------------------

S. No.	Technical Specification of the equipment asked in the bid	Technical Specification of the equipment offered by the bidder with Model No.	Remarks
1.	As per detailed specifications in **Annexure I**		

Note: Bidder must give the Model No. of each furniture items quoted along - with original literature

Signature of Supplier

Name: _____

Address: _____

Contact No: _____

FORMAT FOR QUOTATION SUBMISSION
(In letterhead of the supplier with seal)

Date: _____

To: _____

_____

Sl. No.	Description of goods \ (with full Specifications)	Qty.	Unit	Unit rate in Rs. (Including Ex Factory price, excise duty, packing and forwarding, transportation, insurance, other local costs incidental to delivery and warranty/ guaranty commitments)	Total Price (Without taxes) (A)	GST %	GST Amount Rs.	Total Price (Including GST) Rs.	Make & Model No. quoted
1.	As per detailed specifications in **Annexure I**	01	No.						
				Total Cost					

Total Price (exclusive of taxes) (in Words) _____

Total Price of Bid (Inclusive of taxes) (In Words) _____

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. ----------------------------------- (Amount in figures) (Rupees --amount in words) within the period specified in the Invitation for Quotations.

We confirm that the normal commercial warranty/ guarantee of **12 months** shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Note :	
i)	*Discount or any other offers affecting the package price must be mentioned here only. Discount or any other offers affecting the package price mentioned at any other place of the bid will not be considered.*
ii)	*In case of discrepancy between unit price and total price, the unit price shall prevail.*
iii)	*Bids shall be evaluated based on total price.*

Signature of Supplier

Name: _____

Address: _____

Contact No: _____