



**Tender**  
**For**  
**Supply, Installation, Commissioning & Testing**  
**of**  
**Electrical & Electronics Trainer Boards**

(Ref. No. : NTSC/OK/EED/Trainer Boards/2016-17)

**NSIC- Technical Services Centre**  
(A Government of India Enterprise)  
Okhla Industrial Estate, Phase - III  
Near Govindpuri Metro Station  
New Delhi-110020

Tel No. 011-26826796, 26826847

Fax: - 011-26826783

Website: [www.nsic.co.in](http://www.nsic.co.in)

Email: [ntscok@nsic.co.in](mailto:ntscok@nsic.co.in)

Signature of the Tenderer,  
Name, Designation of the Signatory,  
Stamp of the Company,  
Date:



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Signature of the Tenderer,  
Name, Designation of the Signatory,  
Stamp of the Company,  
Date:



## TENDER INVITING NOTICE

**Subject: - Supply, Installation, Commissioning & Testing of Electrical & Electronics Trainer Boards**

NSIC-Technical Services Centre (NTSC), A Govt. of India Enterprises, Okhla, New Delhi is a reputed Institute for Technical and Industrial training since 1961.

Sealed quotations are invited in two bids system (Technical & Commercial Bid in two separate sealed envelopes contained in one bigger envelope) from the reputed and experienced firms dealing in Supply, Installation, Commissioning and Testing of Electrical & Electronics Trainer Boards as **details under:**

<b>Requirement</b>	<b>Supply, Installation, Commissioning &amp; Testing of Electrical &amp; Electronics Trainer Boards as per Annexure "A" attached.</b>
<b>Tender Documents Download</b>	<b>Tender documents can be downloaded from 8th October, 2016, From website <a href="http://www.nsic.co.in/tender_archivehive.asp">www.nsic.co.in/tender archivehive.asp</a></b>
<b>Technical Bid</b>	The details for submission of Technical Bid is placed at <b>Annexure-"A"</b>
<b>Undertaking</b>	The details for submission of Undertaking is placed at <b>Annexure- "B"</b>
<b>Commercial Bid</b>	The details for submission of Commercial Bid is placed at <b>Annexure-"C"</b>
<b>Cost of Tender Documents</b>	<b>Rs. 500/- (Rupees Five Hundred Only)</b> (Registered Bidders will be exempted as detailed in "Instructions to the Tenderers" at <b>Page no 4 / Sl. No. 5</b> )
<b>Earnest Money Deposit along with Tender</b>	<b>As per EMD mentioned for individual kit in Technical bid (Annexure A)</b> (Registered Bidders will be exempted as detailed in "Instructions to the Tenderers" at <b>Page no 4 / Sl. No. 5</b> )
<b>Last date of submission of Tender</b>	<b>24th October, 2016 up to 14:00 hours sharp.</b>
<b>Date of opening of Technical Bid</b>	<b>24th October, 2016 at 15:00 hours</b>
<b>Address for Tender inquiry, opening of Bid and Delivery and installation of Trainer Boards</b>	General Manager, NSIC- Technical Services Centre, Okhla Industrial Estate, Phase-III, Near Govindpuri Metro Station, New Delhi-110020, Telephone no. 011-26826796, 26826847

**General Manager**  
**Tender Inviting Authority**

Signature of the Tenderer,  
Name, Designation of the Signatory,  
Stamp of the Company,  
Date:



## **INSTRUCTIONS TO THE TENDERER**

The Tender invited from reputed and experienced agencies dealing in Electrical & Electronics works, for Supply, Installation, Commissioning and Testing of Electrical & Electronics Trainer Boards.

### **1. Tender Documents download:-**

The tender documents can be downloaded from our website [www.nsic.co.in/tenders-archive.asp](http://www.nsic.co.in/tenders-archive.asp) w.e.f. 8th October, 2016 to 24th October, 2016.

### **2. Tender Fee & Earnest Money Deposit (EMD):-**

Tender documents fee of Rs. 500/- (Rupees five hundred only) and the Earnest Money Deposit (EMD) for individual training kit, shall be paid through RTGS/NEFT/Digital means on or before 24th October 2016 upto 2.00 P.M. The detail of bank account is as under:

Name (Favoring)	NSIC Ltd.-NTSC A/c
Bank Address	Punjab National Bank, NSIC Bhawan, Okhla Industrial Estate, New Delhi-110020.
A/c No.	0602002100009880
MICR Code	110024073
IFS Code.	PUNB0060200

**Note: In case of transfer of money towards Tender fee and EMD by above means information must be forwarded through E-mail: [ntscok@nsic.co.in](mailto:ntscok@nsic.co.in) immediately along with bank details by mentioning Tender fee and EMD towards Supply, Installation, Commissioning & Testing of Electrical & Electronics Trainer Boards.**

Or

The Tender Fee/Earnest Money Deposit may be deposit by way of D.D. drawn in favor of **NSIC Ltd. - NTSC A/C payable at New Delhi shall be submitted along with Technical Bid.**

### **3. Acceptation of Tender:**

Any cutting/over writing in the tender must be signed by the person who is signing the tender. The rates and units shall not be overwritten. The financial figures in Commercial Bid shall always be both in figures and words. In case of any discrepancy in figures and words, the amount written in words shall be considered.

### **4. Signed and Stamped:**

Tender shall be duly filled in all respect. All pages of the Tender should be signed by the Authorized Signatory of Tenderer with Company Seal.

### **5. Earnest Money Deposit (EMD):-**

- a) The offers without EMD will be rejected. In case, the tenderer participates for any one Trainer Board, then EMD shall be deposited to the amount reflected against individual Trainer Board
- b) However, there is exemption of Tender Fee and EMD applicable to the units registered with Central Purchase Organization (DGS&D), National Small Industries Corporation (NSIC) or the concerned Ministry or Department as defined under Rule 157 of General Financial Rules (GFR),

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2005. In case successful bidder exempted from EMD, then equal amount of EMD of each trainer board shall be deposited as a security money.

- c) To avail exemption of Tender Fee/ EMD a photo copy of valid certificate as mentioned in at **Page no. 4 S.L no. 5 (b)** need to be attached with Technical Bid.
- d) Any request by the bidders to consider their EMD furnished by them to NTSC for any other Contract/ tender cannot be considered as EMD for this tender.
- e) No interest shall be paid for earnest money deposited by the tenderer.
- f) EMD will be refunded to the unsuccessful bidders after the supply order placed on the successful bidder.
- g) In case of successful bidder, the EMD will be retained as a security money by the corporation for twelve months from the date of submission of bills/invoices for payments.
- h) **The EMD will be forfeited in following cases:-**
  - If the successful bidder fails to furnish the acceptance in writing, within 10 days of award of supply order.
  - If the bidder fails to supply the Trainer Boards due to any reason within 30 days from the date of issue of confirmed Supply Order.
  - If bidder fails to abide by the Instructions, Terms & Conditions of the award of this Tender.
  - If the bidder withdraws the bid during the period of bid validity specified in the tender.

**6. Submission of Tax Documents:-**

The Tenderer shall submit the copy of valid PAN, TIN/VAT registration along with the Technical Bid of the Tender document. To avail TAX exemption a copy of TAX exemption, issued by Taxation Authorities is need **to be enclosed with Technical Bid.**

**7. Undertaking on Tender:-**

An undertaking should be furnished and submitted along with the Technical Bid by the bidder on the company letter head as per the format enclosed at **Annexure “B”**.

**8. Submission of Tender:-**

a) The Tender shall be placed in a properly sealed bigger envelope addressed to General Manager, NSIC-Technical Services Centre, Okhla Industrial Estate, Phase III, Near Govindpuri Metro Station, New Delhi – 110020 **And**

**The said bigger envelope shall contain two separately sealed envelopes containing Technical Bid and Commercial Bid.**

The bigger envelope shall be super-scribed as Supply, Installation, Commissioning & Testing of Electrical & Electronics Trainer Boards with its due date. The two sealed envelopes inside the bigger envelope must be super-scribed as:-

**Envelope No-1:-** “Supply, Installation, Commissioning & Testing of Electrical & Electronics Trainer Boards- **TECHNICAL BID**”. And

**Envelope No-2:-** “Supply, Installation, Commissioning & Testing of Electrical & Electronics Trainer Boards- **COMMERCIAL BID**”.

Signature of the Tenderer,  
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b) While submitting the Tender, if any of the prescribed conditions are not fulfilled or are incomplete in any form, the Tender is liable to be rejected.

**9. Mandatory Documents to be enclosed with the Technical Bid:-**

- a) Duly signed & stamped all pages of Tender documents as a mark of your acceptance.
- b) Undertaking on letter head as per enclosed **Annexure-“B”**.
- c) Photo copies of PAN, VAT, / TIN, Tax exemption (if any) duly signed & stamped by the tenderer. Original may be checked at appropriate stage.
- d) Photo copy of document authenticating eligibility towards Tender Fees/EMD exemption, if awarded duly signed & stamped by the tenderer.
- e) Photo copy of Tender fee & EMD payment bank details transferred to NSIC – NTSC A/c.
- f) Copy of Supply order for last three years.
- g) Authorized signatory letter.
- h) Product Brochure.

**10. Opening & Evaluation of Technical Bid:-**

- a) The date of opening of Technical Bid is 24.10.2016at 1500 Hrs.
- b) Bidder, whose Technical Bid is qualified as per terms & condition specified in this tender document, will be eligible to consider for opening of Commercial Bid and informed separately.
- c) The bidder's authorized representative who attends the bid opening shall sign an attendance register as a proof of having attended the bid opening.
- d) The date for opening second envelope containing Commercial Bid shall be intimated to the qualified bidders separately.

**11. Award of supply order:-**

- a) The Commercial Bids of the technically qualified Bidders shall be opened by the constituted committee. Thereafter the committee shall prepare the comparative statement (CST) based on the price offered at NSIC Technical Service Centre, Okhla Ind. Estate Phase – III, New Delhi- 110020. Price offered for individual trainer board would be considered for finalize the L1 (lowest bidder).
- b) NSIC Technical Service Centre shall award the supply order to the eligible bidder whose Commercial Bid has been accepted and determined as the lowest evaluated Commercial Bid.
- c) If more than one bidder happens to quote the same lowest price, NSIC Technical Service Centre reserves the right to award the contract to any one Bidder. No representation in this regard shall be entertained for any reason.

Signature of the Tenderer,  
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Stamp of the Company,  
Date:



## **TERMS & CONDITIONS**

Submission of the duly signed tender implies that these conditions of tender have been read by the Tenderer and is aware of the scope of the supply and the quality of the material to be supplied:-

### **1. Payment:-**

- a) 100% Payment will be made against delivery for which the Tenderer shall submit tax Invoice in duplicate (original + copy) giving the reference number of the supply order along with delivery note and all relevant documents related to genuine Trainer Boards, warranty period, licenses if any and nearest Service Centre details for future purpose.

The Tenderer shall clearly indicate that the proper Installation & successful testing of Trainer Boards is done and the said document shall be certified by the authorized official of NTSC Okhla to release full & final payment.

- b) No extra payment shall be paid on account of any discrepancy in nomenclature of items. The bidder shall seek clarifications if any before submitting the bid.
- c) Necessary Tax deduction / exemptions will be affected on approved amount for the purchase.  
**The Corporation will not issue Forms "C" or "D".**

### **2. Delivery Period:-**

- a) The delivery period for the supplies to be completed within **30 days** from the date of issue of confirmed supply order from NTSC Okhla, New Delhi -110020.
- b) In case tenderer fails to supply within the accepted period, General Manager of NSIC-Technical Services Centre, reserves the right to cancel the Supply Order and may initiate action to debar the supplier for all future business dealing with NSIC for next three years.

### **3. Guarantee of Quality and Warranty of goods supplied :**

- a) The Trainer Boards offered shall conform to the specifications as given in tender. The warrantee shall be against defective design, defective quality material supplied, manufacturing defects etc. for a minimum period of 12 months from the date of Installation & Commissioning of Trainer Boards.
- b) The Tenderer have right to offer warrantee more than 12 months from the date of Installation & Commissioning of Trainer Boards.
- c) The material to be used in Trainer Boards shall be of good quality and a warranty certificate shall be submitted.

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**4. Services & Support:-**

The Bidder shall provide service & support on demand towards the maintenance of the trainer Boards for one year time free of cost from the date of supply/satisfactory installation of Trainer Boards at NTSC, Okhla, New Delhi - 110020. The successful tenderer has to submit an indemnity bond on Rs. 100/- stamp paper towards commitment of supplier for services rendered during warrantee period.

**5. Validity of Tender:**

Validity of tender shall be **60 days** from the date of opening of Technical Bid.

**6. Dispute:**

In the event of any dispute at any stage the legal matter shall be subjected to the jurisdiction of Delhi Courts only.

**7. Final Acceptance:**

General Manager, NTSC, Okhla reserves the right without given any reason to accept or reject in full or any part of this Tender at any stage of this Tender process.

Signature of the Tenderer,  
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Stamp of the Company,  
Date:





**TECHNICAL BID**

Tender Ref.No: (Ref. No. : NTSC/OK/EED/Trainer Boards/2016-17)

**Note: Please Write Yes/No for compliance of specifications. Only “Yes” compliance would be considered to qualify for financial bid.**

S.N	DESCRIPTION	Unit	Qty.	EMD of Individual (Rs.)	Compliance (Yes/No)
1.	<b>Ceiling Fan Winding Machine Trainer Boards</b> Detailed Specifications: Ceiling Fan Stater: 105mm to 165mm Max, Armature Max Core Dia: Max 75mm, Core Length: 75mm, Shaft Length: 350mm, Capacity: 8-10 per hour, Counter: Digital Pre-set (3 Digit), Motor Speed R.P.M.: 100 to 1500 R.P.M, Power Supply: 200 V A.C. Single Phase 50Hz, Wire Gauge: 30 to 40 SWG. Dimensions: 580mm x 330mm x 460mm.	Nos.	01	1600/-	
2.	<b>Industrial PLC Trainer Boards</b> Detailed Specifications: CPU(DIO) K7M DR 30UE(18DI+12DO),Memory:- 2K step(EEPROM)0.4usec per instruction ,DIO modules:- DIO 10: G7E, DR10A(6DI+4R) (additional DID module for expansion if needed), Software:- KGLWIN supports ladder programming & monitoring /troubleshooting & instruction set, Communication Ports:- RS232C for Ladder Programming, RS485 with LG protocol for Multidrop Networking, Operating Voltage:- 110/220Vac ± 20% 50/60Hz, PLC(55 VA ), 24VPS(75VA), Mechanical Specifications:- Table top Aluminum profile rack of 4x2 matrix consisting of (5+2) panels inclusive of converter com extension panel (CDP) and simulation com extension panel(SEPs) to provide necessary switches, lamps, pots and application panels. Lamps, pots and application panels. Dimensions: 960(L) x300(W) x545(H) mm.Net Wt.:- 23 Kg, Converter cum Distribution panel:-Total 64 no. mm Banana Sockets, 24 for Digital inputs. 16 for Digital Outputs, 2 for Analog I/O & 16 for +24V Supply &GND Facilitates easy replacement/ wiring, Simulation cum Extension panel:-a) For Digital Outputs: 8 No. of LED Indicator, 8 No. of Relay panel with coil rating 24V and contact rating of 220V AC/ 1Amp. (Resistive) b) For Digital Inputs: 8No. of Digital input.(4 toggle switches + 4 push buttons), Power Supply Panel:- 24V/Amp. SMPS type Supply, Power ON indicator/ 3 Nos. 230V O/P with switch & fuse protection for other use. Application Panel & SAPS a) Common Base Board for Static Application panel: consisting of 38 LEDs, with 10 LED Bar Graph for AO & 32 sockets, RTD signal conditioning circuit for temperature sensor, b) Replaceable 19 Nos. of Static Application Panel which may be inserted into common baseboard	Nos.	01	2200/-	

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	panel:- 1) Door Bell Operation, 2) Switching of lights, 3) Silo Control, 4) Seven Segment Display, 5) Starter Control, 6) Sequential Control of Motors, 7) Star Delta Control, 8) Resistance Welding, 9) Traffic Light Control*, 10) Drink Dispenses, 11) Parking Garrage,12) Combination Lock,13) Elevator Simulator, 14) Washing Machine).				
3.	<b>Transformer Winding Machine Trainer Boards</b>	Nos.	01	1200/-	
	Detailed Specifications :Manual Winding Machine, Mechanical Coil Winding Machine for Linear Winding, Coil Winding Machines, Linear Winding - Manual Cum Motorized, Layer Winding with Manual Traverse Shift, Application: Transformer, Fuel Gauge Coil, Ignition Coil, Starter Coil, Bobbin less Coil With row material us in machine				
4.	<b>Solar Technology Trainer Boards</b>	Nos.	01	2200/-	
	Detailed Specifications: SCR actuator com sensor signal conditioning panel, Supports signal conditioning circuit for temperature to give output 0-2.5Vdc, Instrumentation Power Cum multichannel DPM panel, +12V,-12V,@500 mA.&+5V@300 mA, Multi-channel DPM for temperature display, - 20 pin FRC power bus to supply power to neighboring panel, Solar cell experiment panel, 50x50mm x2 nos. solar cells, Loading pots (500E and 5K), Series parallel combination arrangement, Peltier module to study temperature effect, PT100 sensor to measure temperature, Cooling Fan to cool heat sink. Spectral response & Carrier Lifetime Measurement panel, 11 different wavelength LED's @ constant 20/30 mA current to determine spectral response parameter, 50x50mm x2 nos. solar cells. White led bank of 8 LED's to determine carrier life time parameter, IP 12 W switch to select different wave length LED's, Solar Application panel, 12V LED lamp and fan, Dimmer Panel, Dimmers 3 Nos. to set intensity of halogen lamp, DMM Panel, DC Voltmeter (0-100V), DC Ammeter (0-5A),- Mechanical Dimensions(mm): 1170(L) x300(w)x900(H), Tillable lockable frame: 30Kg. Gross Weight: 40Kg, 20Wx2 photo-voltaic (PV) modules mounted on tiltable lockable aluminum frame (PV module dimension 500x400x35mm). 500w Halogen lamp 2 nos to simulate sun in laboratory, Solar cell experiment panel to study solar characteristics, Rheostat as load for SPV modules (800E,2.5A), MPPT Battery Charger Panel, Battery 12v, Standalone Inverter).				

Signature of the Tenderer,  
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Stamp of the Company,  
Date:



S.N	DESCRIPTION	Unit	Qty.	EMD of Individual (Rs.)	Compliance (Yes/No)
5.	<p><b>Transformer Trainer Boards</b></p> <p>Detailed Specification: Electrical trainers may need a set of associated panels which are mounted in a light weight sturdy aluminum flat demo panel system, Facilitates easy and safe wiring by students due to 4mm sturdy shrouded banana patch cords and shrouded socket arrangement for high voltage circuits, Each panel has ABS molded plastic sturdy enclosure, and colorful screwless overlays showing circuit diagram &amp; its connection tag numbers for easy understanding and connections, Set of Instructor Guide &amp; Student Workbook, List of Panels: Input 3 phase DOL starter panel, Digital multifunction measurement panel 3 phase, Digital multifunction measurement panel 1 phase, FWD – OFF-Rev switch panel, Single phase input MCB panel, Secondary side AC Voltmeter Panel, Dual range Secondary side AC ammeter panel, Milliohmmeter(V-I method), Resistive load panel, Lamp Load, 3 PHASE Dimmer-1 No, Rack/Panels: 4x3 / 12 Nos, Mechanical Dimensions/Wt. : 960(L)X300(W)X720 (H) mm Net Wt.=42 Kg, Gross Weight=50 Kg, 1 Phase Transformer (1. VA rating : 300 VA 2. X'merType:1 phase (2 No.) 3. Construction: Double wound iron core EI step down Transformer / Star secondary design.4. Primary: 0-115-200-230VAC/1.3A, 50 Hz brought out on 2x2 sockets 5. Secondary: 200 Vac / 1.5 Amp. Brought out on 2x2 sockets), 3 Phase Transformer (1. VA rating : 300 VA, 2. X'mer Type: 3 phase (1 No.), 3. Construction: Iron core strip lamination type step down Delta primary 4. Primary: 3 Nos. Isolated prime series 0-415 /0.24 A at 50 Hz brought out on 3x3 sockets, 5. Secondary: 3 Nos. Isolated winding groups main 110V/0.5A, zigzag 110V/0.5A, Tertiary 220V / 0.25 A brought out 6. 3 Phases 0-270V AC /3 Amp. Variac.</p>	Nos.	01	1600/-	
6.	<p><b>LCD/LED TV Training Board/Kit</b></p> <p>Detailed Specifications : Colour TV kit, Mounted Color TV kit, Block diagram of TV, Trainer board consists of 9 function blocks, TV receiver, Fault finding panel. Facility to connect VCD, DVD and Video games, Good sound quality speakers, IR sensor &amp; manual keyboard on front panel to use remote control.</p>	01	Nos	2000/-	

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S.N	DESCRIPTION	Unit	Qty.	EMD of Individual (Rs.)	Compliance (Yes/No)
7.	<b>CCTV Setup Training Board</b>	Nos.	01	1500/-	
	4 HD-TVI/Analog: 4-ch video&1-ch audio input, 1 SATA interface,1920×1080P: 12 fps/ch, 1280×720P: 25(P)/30(N) fps/ch, standalone 1U case, IP Camera: 1/3" Progressive CMOS, ICR, 0.01lux/F1.2, 1280x960:25fps(P)/30fps(N), 4mm/F2.0 lens (2.8mm, 6mm optional), H.264/MJPEG, dual-stream, IP66, DC12V & PoE, DWDR, 3D DNR, BLC, On-board card slot (up to 64GB), Vandal proof, HD Cam: HD720p,1/3" CMOS, 24 pcs IR LEDs, 20m IR, Outdoor IR Eyeball, ICR, 0.01 Lux/F1.2, 12 VDC, Smart IR, IP66, Wide operating temperature range (-40°~60°), 2.8/3.6/6mm Lens, Analog Cam:700 TVL, 1/3" DIS, 20m IR Distance, ICR, 0.1 Lux/F1.2, 0.3 Lux/F2.2,12 VDC, Smart IR, Wide operating temperature Range (-40°~60°), (2.8/3.6/6mm Lens, Default: 3.6mm / F2.2 Lens),Analog Vf Cam: 700 TVL, 1/3" DIS, 30m IR Distance, ICR. 0.1 Lux/F1.2, 3-axis adjustment, 12 VDC, Wide operating temperature range (-40°~60°), 2.8 - 12mm/F1.4 Vari-focal Lens				

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Stamp of the Company,  
Date:



## Undertaking

(On company letter head)

- We declare that we are not a defaulter to any Govt. organization/ PSU since last 2 years from the date of issue of this tender no **NTSC/OK/EED/Trainer Boards/2016-17** due to non-supply of material for any reason as agreed to supply in stipulated time.
- We confirm with our acceptance the Instructions of the Tender and Terms & Conditions of Tender.
- We also confirm that this Tender has been thoroughly read while filling up and all information's are true on the best of our knowledge.

Signature of the Tenderer,  
Name, Designation of the Signatory,  
Stamp of the Company,  
Date:



**COMMERCIAL BID**

1. Tender Ref. No: NTSC/OK/EED/Trainer Boards/2016-17)
2. Name of the Tenderer: .....
3. The offer with rates for the schedule of requirements of items, as elaborated under, to be submitted. Adhering to the format given below is a Pre-requisite for considering your quotations:

S.N.	DESCRIPTION	Unit	Qty.	Amount including taxes, duties & other charges. (in Rs.)	
				in figure	(in words)
1.	<b>Ceiling Fan Winding Machine Trainer Boards</b>  Detailed Specifications: Ceiling Fan Stater: 105mm to 165mm Max, Armature Max Core Dia: Max 75mm, Core Length: 75mm, Shaft Length: 350mm, Capacity: 8-10 per hour, Counter: Digital Pre-set (3 Digit), Motor Speed R.P.M.: 100 to 1500 R.P.M, Power Supply: 200 V A.C. Single Phase 50Hz, Wire Gauge: 30 to 40 SWG. Dimensions: 580mm x 330mm x 460mm.	Nos.	01		
2.	<b>Industrial PLC Trainer Boards</b>  Detailed Specifications: CPU(DIO) K7M DR 30UE(18DI+12DO),Memory:- 2K step(EEPROM)0.4usec per instruction ,DIO modules:- DIO 10: G7E, DR10A(6DI+4R) (additional DID module for expansion if needed), Software:- KGLWIN supports ladder programming & monitoring /troubleshooting & instruction set, Communication Ports:- RS232C for Ladder Programming, RS485 with LG protocol for Multidrop Networking, Operating Voltage:- 110/220Vac ± 20% 50/60Hz, PLC(55 VA ), 24VPS(75VA), Mechanical Specifications:- Table top Aluminum profile rack of 4x2 matrix consisting of (5+2) panels inclusive of converter com extension panel (CDP) and simulation com extension panel(SEPs) to provide necessary switches, lamps, pots and application panels. Lamps, pots and application panels. Dimensions: 960(L) x300(W)x545(H) mm.Net Wt.:- 23 Kg, Converter cum Distribution panel:-Total 64 no. mm Banana Sockets, 24 for Digital inputs. 16 for Digital Outputs, 2 for Analog I/O & 16 for +24V Supply &GND Facilitates easy replacement/ wiring, Simulation cum Extension panel:-a) For	Nos.	01		

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Date:





	Digital Outputs: 8 No. of LED Indicator, 8 No. of Relay panel with coil rating 24V and contact rating of 220V AC/ 1Amp. (Resistive) b) For Digital Inputs: 8No. of Digital Input.(4 toggle switches + 4 push buttons), Power Supply Panel:- 24V/Amp. SMPS type Supply, Power ON indicator/ 3 Nos. 230V O/P with switch & fuse protection for other use. Application Panel & SAPS a) Common Base Board for Static Application panel: consisting of 38 LEDs, with 10 LED Bar Graph for AO & 32 sockets, RTD signal conditioning circuit for temperature sensor, b) Replaceable 19 Nos. of Static Application Panel which may be inserted into common baseboard panel:- 1) Door Bell Operation, 2) Switching of lights, 3) Silo Control, 4) Seven Segment Display, 5) Starter Control, 6) Sequential Control of Motors, 7) Star Delta Control, 8) Resistance Welding, 9) Traffic Light Control*, 10) Drink Dispenses, 11) Parking Garage,12) Combination Lock,13) Elevator Simulator, 14) Washing Machine).				
3.	<b>Transformer Winding Machine Trainer Boards</b> Detailed Specifications :Manual Winding Machine, Mechanical Coil Winding Machine for Linear Winding, Coil Winding Machines, Linear Winding - Manual Cum Motorized, Layer Winding with Manual Traverse Shift, Application: Transformer, Fuel Gauge Coil, Ignition Coil, Starter Coil, Bobbin less Coil With raw material use in machine	Nos.	01		
4.	<b>Solar Technology Trainer Boards</b> Detailed Specifications: SCR actuator com sensor signal conditioning panel, Supports signal conditioning circuit for temperature to give output 0-2.5Vdc, Instrumentation Power Cum multichannel DPM panel, +12V,-12V,@500 mA.&+5V@300 mA, Multi-channel DPM for temperature display, - 20 pin FRC power bus to supply power to neighboring panel, Solar cell experiment panel, 50x50mm x2 nos. solar cells, Loading pots (500E and 5K), Series parallel combination arrangement, Peltier module to study temperature effect, PT100 sensor to measure temperature, Cooling Fan to cool heat sink. Spectral response & Carrier Lifetime Measurement panel, 11 different wavelength LED's @ constant 20/30 mA current to determine spectral response parameter, 50x50mm x2 nos. solar cells. White led bank of 8 LED's to determine carrier life time parameter, IP 12 W switch to select different wave length LED's, Solar Application panel, 12V LED lamp and fan, Dimmer Panel, Dimmers 3 Nos. to set intensity of halogen lamp, DMM Panel, DC Voltmeter (0-100V), DC Ammeter (0-5A),- Mechanical Dimensions(mm): 1170(L) x300(w)x900(H), Tillable lockable frame: 30Kg. Gross Weight: 40Kg, 20Wx2 photo-voltaic (PV) modules mounted on tillable lockable aluminum frame (PV module	Nos.	01		

Signature of the Tenderer,  
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Stamp of the Company,  
Date:





	dimension 500x400x35mm). 500w Halogen lamp 2 nos to simulate sun in laboratory, Solar cell experiment panel to study solar characteristics, Rheostat as load for SPV modules (800E, 2.5A), MPPT Battery Charger Panel, Battery 12v, Standalone Inverter).				
5.	<b>Transformer Trainer Boards</b>  Detailed Specification: Electrical trainers may need a set of associated panels which are mounted in a light weight sturdy aluminum flat demo panel system, Facilitates easy and safe wiring by students due to 4mm sturdy shrouded banana patch cords and shrouded socket arrangement for high voltage circuits, Each panel has ABS molded plastic sturdy enclosure, and colorful screw less overlays showing circuit diagram & its connection tag numbers for easy understanding and connections, Set of Instructor Guide & Student Workbook, List of Panels: Input 3 phase DOL starter panel, Digital multifunction measurement panel 3 phase, Digital multifunction measurement panel 1 phase, FWD – OFF-Rev switch panel, Single phase input MCB panel, Secondary side AC Voltmeter Panel, Dual range Secondary side AC ammeter panel, Milli ohmmeter(V-I method), Resistive load panel, Lamp Load, 3 PHASE Dimmer-1 No, Rack/Panels: 4x3 / 12 Nos, Mechanical Dimensions/Wt. : 960(L)X300(W)X720 (H) mm Net Wt.=42 Kg, Gross Weight=50 Kg, 1 Phase Transformer (1. VA rating : 300 VA 2. X'merType:1 phase (2 No.) 3. Construction: Double wound iron core EI step down Transformer / Star secondary design.4. Primary: 0-115-200-230VAC/1.3A, 50 Hz brought out on 2x2 sockets 5. Secondary: 200 Vac / 1.5 Amp. Brought out on 2x2 sockets), 3 Phase Transformer (1. VA rating: 300 VA, 2. X'mer Type: 3 phase (1 No.), 3. Construction: Iron core strip lamination type step down Delta primary 4. Primary: 3 Nos. Isolated prime series 0-415 /0.24 A at 50 Hz brought out on 3x3 sockets, 5. Secondary: 3 Nos. Isolated winding groups' main 110V/0.5A, zigzag 110V/0.5A, Tertiary 220V / 0.25 A brought out 6. 3 Phases 0-270V AC /3 Amp. Variac.	Nos.	01		
6.	<b>LCD/LED TV Training Board/Kit</b>  Detailed Specifications : Colour TV kit, Mounted Color TV kit, Block diagram of TV, Trainer board consists of 9 function blocks, TV receiver, Fault finding panel. Facility to connect VCD, DVD and Video games, Good sound quality speakers, IR sensor & manual keyboard on front panel to use remote control.	Nos.	01		

Signature of the Tenderer,  
Name, Designation of the Signatory,  
Stamp of the Company,  
Date:



7.	<b>CCTV Setup Training Board</b>	Nos.	01		
	4 HD-TVI/Analog: 4-ch video&1-ch audio input, 1 SATA interface,1920×1080P: 12 fps/ch, 1280×720P: 25(P)/30(N) fps/ch, standalone 1U case, IP Camera: 1/3" Progressive CMOS, ICR, 0.01lux/F1.2, 1280x960:25fps(P)/30fps(N), 4mm/F2.0 lens (2.8mm, 6mm optional), H.264/MJPEG, dual-stream, IP66, DC12V & PoE, DWDR, 3D DNR, BLC, On-board card slot (up to 64GB), Vandalproof, HD Cam: HD720p,1/3" CMOS, 24 pcs IR LEDs, 20m IR, Outdoor IR Eyeball, ICR, 0.01 Lux/F1.2, 12 VDC, Smart IR, IP66, Wide operating temperature range (-40°~60°), 2.8/3.6/6mm Lens, Analog Cam:700 TVL, 1/3" DIS, 20m IR Distance, ICR, 0.1 Lux/F1.2, 0.3 Lux/F2.2,12 VDC, Smart IR, Wide operating temperature Range (-40°~60°), (2.8/3.6/6mm Lens, Default: 3.6mm / F2.2 Lens),Analog Vf Cam: 700 TVL, 1/3" DIS, 30m IR Distance, ICR. 0.1 Lux/F1.2, 3-axis adjustment, 12 VDC, Wide operating temperature range (-40°~60°), 2.8 - 12mm/F1.4 Vari-focal Lens				

**Note:- The rates quoted above should be inclusive of basic price, statutory levies, taxes, duties, packing, forwarding, transportation, insurance and Supply, Installation, Commissioning & Testing of Trainer Boards at NSIC- Technical Services Centre, Okhla Industrial Estate, Phase-III, Near Govindpuri Metro Station, New Delhi-110020.**

Signature of the Tenderer,  
Name, Designation of the Signatory,  
Stamp of the Company,  
Date:

