

State Industries Promotion Corporation of Tamil Nadu Limited (SIPCOT)

19-A, Rukmani Lakshmipathy Road, Egmore, Chennai - 600 008



Tender Reference No. : **PROJ/T. No. 8-C/TECHINFRA/2022**, DATED **13-04-2022**

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur

Package 3 : Industrial Sensing and Control Systems

Date of Release of Tender	14-04-2022
Pre-bid Meeting via VC	22-04-2022 at 3:30 pm
Proposal Due Date	06-05-2022 before 3:00 pm
Opening of the Proposal	06-05-2022 at 4:00 pm

IMPORTANT NOTICE

This tender procedure is governed by the Tamil Nadu Transparency in Tenders Act, 1998 and the Tamil Nadu Transparency in Tender Rules, 2000 as amended from time to time. In case of any conflict between the terms and conditions in the tender document and the Tamil Nadu Transparency in Tenders Act, 1998 and The Tamil Nadu Transparency in Tender Rules, 2000 the Act and Rules shall prevail.

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at
Sriperumbudur and Hosur - Package 3 : Industrial Sensing and Control Systems

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NOTICE INVITING TENDER



**State Industries Promotion Corporation of Tamil Nadu Limited
(SIPCOT)
(Government of Tamil Nadu Undertaking)**

Notice Inviting Tender

PROJ/T. No. 8-C/TECHINFRA/2022, DATED 13-04-2022

Sealed tenders are invited under “**Single Cover System**” from the Original Equipment Manufacturers (OEM) or Authorized distributors / Authorized Dealers for procurement of **Industrial Sensing and Control Systems** for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur.

1	Tender Inviting Authority	The Managing Director, SIPCOT, 19-A,Rukmani Lakshmipathy Road, Egmore, Chennai 600008.
2	Name of the Work	RFP for Selection of Technical Infrastructure Provider for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur - Package 3 : Industrial Sensing and Control Systems
3	Tender Document only online download	Tender document can be downloaded from 14-04- 2022 to 05-05-2022 . The tender documents could be downloaded from www.sipcot.tn.gov.in/ and www.tenders.tn.gov.in at free of cost.
4	Earnest Money Deposit	Rs.30,000/-
5	Due Date, Time & Place of submission of the tender	06-05-2022 up to 3.00 PM at the address mentioned in Sl. No (1) above.
6	Date, Time and Place of opening of the tender	06-05-2022 at 4.00 PM at the address mentioned in Sl. No (1) above.

Managing Director.

1 Introduction

- 1.1 State Industries Promotion Corporation of Tamil Nadu Limited (SIPCOT) (the “**Authority**”), a Government of Tamil Nadu Undertaking has proposed to establish Industrial Innovation Centres in its Industrial Parks located in different parts of Tamil Nadu, with the objective of catalysing innovations and start-ups to achieve manufacturing excellence. Through this initiative the Authority intends to spur the pace of adoption of technology across industrial sectors in the State.
- 1.2 As the first step, the Authority has proposed to establish two Industrial Innovation Centres one each at Sriperumbudur and Hosur.
- 1.3 The SIICs are envisioned to serve as Open Industrial Innovation Ecosystems, offering comprehensive technical infrastructure, services and resources to seed, nurture, and accelerate the development of technologically advanced innovations into industrial-grade solutions ready for deployment at scale, and into commercially viable products, thereby creating a deep impact to both the technology and manufacturing sectors in Tamil Nadu simultaneously.
- 1.4 In this context, the Authority invites sealed tenders for the selection of suitable advanced technology and innovation lab infrastructure providers in “**Single Cover System**” from eligible Technology Providers for the procurement of the Technology and Innovation Lab Infrastructure along with installation, services and annual maintenance support through transparent bidding process.

2 Scope of Services

- 2.1 Tenders are called for procuring the following equipment along with the annual maintenance support for the period of warranty.

S.No.	Asset Category	Estimated Max. Value of Procurement	Service Support
1.	Industrial Sensing and Control Systems as per the items, their quantities and specifications detailed in the Appendix 1	INR 70.80 Lakhs (including GST)	1-year warranty and 1-year AMC support required as per the Appendix-1

- 2.2 The bidder shall provide free maintenance during the warranty period for all the equipment procured under this contract.
- 2.3 The bidder shall be responsible for commissioning of the equipment, including installation, demonstration, onsite training etc. as may be desired and based on the request of the Authority/Partner Incubator for the SIICs.

3 Qualification Criteria

#	Qualification Criteria	Supporting Document
1.	Eligible Entity : OEM or Authorized Dealer	
1.1	Original Equipment Manufacturer (OEM) The original manufacturer of the equipment stated in the Tender should have been in the manufacturing industry/existence for the past 5 years.	<ul style="list-style-type: none"> ● Company Registration Certificate ● GST Certificate ● PAN Card Copy ● MoA ● AoA ● Audited Financial Statements of last 3 years ● Certificate to the effect that they manufacture such and such make of the equipment.
1.2	Authorized Dealer/Distributor The Dealer or Distributor who is authorized by the registered OEM should have been continuously supplying items/equipment relevant to the Tender for the past 3 years and the respective OEM should have been in manufacturing industry/existence for the past 5 years.	<ul style="list-style-type: none"> ● Company Registration Certificate ● GST Certificate ● PAN Card Copy ● MoA ● AoA ● Audited Financial Statements of last 3 years ● Authorization Certificate from respective OEM stating the duration of the dealership engagement. In cases where multivendor products are to be procured, Authorization Certificate from OEMs which cover at least 50% of the BOQ line items shall be provided. ● Certificate from OEM to the effect that they manufacture such and such make of the equipment explicitly citing their experience in the industry.
2.	Procurement Experience 2.1 The bidder should have successfully completed supply and installation of at least 3 purchase orders relevant to the Tender, each of value at least 50% of the value quoted for this bid, within the past 3 years from the bid announcement date.	<ul style="list-style-type: none"> ● Purchase orders of installations done at Corporates, R&D Labs owned/sponsored by Industry or Government along with the invoice copies. ● Also, the Purchase Orders along with relevant invoices from premier Government & Government recognised academic institutions shall be accepted. ● Registered Company's IT Returns filed for the respective financial years.

3.	Coverage of the Tender Bill of Quantities (BOQ) <ol style="list-style-type: none"> a. All the itemized BoQ stated in the tender to be covered (100% coverage of BoQ line items) b. The stated quantity for each of the BoQ items mentioned in the tender has to be provided without any changes. c. The requirements/specifications of each item on the BoQ to be met as per the details provided in the tender document. 	Self-Declaration by Bidder along with the signed BOQ compliance sheet as per Annexure 8
4	Standardized Items All the items/equipment to be provided by the bidder should meet the required industry Standards.	Copy of relevant certifications acquired by the OEM for the items/equipment (if applicable) stated in the tender to ensure the quality & industry standards.

- 3.1 The OEM which has Authorized its own Dealer or Distributor to bid for this tender cannot bid for the same. In such a case, if the bids are received from the OEM and their Authorized Dealer, bids from the OEM shall be discarded.
- 3.2 The bidders shall be evaluated for the above eligibility criteria to establish the technical competence of the bidder for the current procurement.

4 Schedule of Selection Process

The Authority would endeavour to adhere to the following schedule:

#	Event Description	Date
1.	Pre-Bid Meeting (via Video Conference)	22-04-2022 at 3:30 pm
2.	Due Date for Tender Submission	06-05-2022 by 3:00 pm
3.	Opening of Tenders	06-05-2022 by 4:00 pm

5 Cost of Tendering

- 5.1 The bidder shall bear all costs associated with the preparation and submission of this Tender and the tender inviting authority will in no way be responsible or liable for these costs
- 5.2 The tender documents can be downloaded from www.sipcot.tn.gov.in and www.tenders.tn.gov.in at free of cost.

6 General Instructions

- 6.1 The bidders are requested to go through the instructions, terms and conditions and specifications given in the tender. Failure to furnish all required information in every aspect will be at the

bidder's risk and may result in the rejection of the tender.

6.2 **Clarification on Tender :** Any queries on the tenders may be sent to pmu@sipcot.in

6.3 Amendments to the Tender :

6.3.1 Tender Inviting Authority may amend the tender wherever it is felt that such an amendment is absolutely necessary.

6.3.2 Amendment to tender may also be given in response to clarifications by prospective bidders and it is solely the discretion of the Tender Inviting Authority. Any amendment to the tender will be uploaded on the website www.sipcot.tn.gov.in and www.tenders.tn.gov.in.

6.4 **Pre-bid meeting :** There will be a pre-bid meeting as per the schedule indicated in **the section 4** via Video Conference during which the prospective bidders can get clarifications about the tender. The bidders shall send their queries in writing through mail to pmu@sipcot.in if any at least one day prior to the pre-bid meeting date. The link for Video Conferencing will be shared to the designated representative by email.

7 Earnest Money Deposit (EMD)

7.1 The bidder should furnish Earnest Money Deposit (EMD) of **Rs.30,000/- (Rupees Thirty thousand only)** with at least 90 days validity along with the tender in the form of a Demand Draft only drawn on any Indian Nationalized/Scheduled Commercial Bank in favour of "SIPCOT Ltd" payable at Chennai.

7.2 Any tender without required EMD will be considered as NON-RESPONSIVE and will be summarily rejected

7.3 The EMD of successful bidder shall be discharged after submission of the required Performance Guarantee.

7.4 The EMD shall be forfeited:

7.4.1 If the Bidder withdraws his bid during the period of bid validity.

7.4.2 In the case of successful bidder, if he fails to furnish the required Performance Guarantee within the specified time limit.

7.5 The EMD for unsuccessful bidders shall be returned without any interest within 30 days from date of Letter of Acceptance with the successful bidder or at the expiry of the Bid Validity period, whichever is earlier.

7.6 EMD is exempted in the following cases:

7.6.1 The Small-Scale Units located within the State and Registered with Tamil Nadu Small Industries Development Corporation

7.6.2 The Small-Scale Units registered with National Small Industries Corporation

7.6.3 The SSI units holding Acknowledgement issued for Entrepreneur Memorandum Part – II obtained from the District Industries Centre in respect of those items for which the Registration Certificate/Acknowledgement has been issued.

7.6.4 Small Scale Industrial Units located outside the State and such of those units registered with NSIC in respect of those items covered under Registration Certificate.

7.6.5 MSE units with Udyog Aadhar Memorandum

8 Performance Guarantee/Security

8.1 Successful bidder has to furnish Performance Guarantee equivalent to 1% of the final negotiated value of services in the form of Bank Guarantee as per the **Appendix 3**

8.2 Performance Guarantee shall be released only after the expiry of the warranty period indicated in the section 2.1

9 Submission of Tender

9.1 Bidders are advised to go through the tender documents and understand all the provisions and stipulations contained therein before submitting the tender.

9.2 The tender shall be submitted as per the procedures and requirements stipulated herein.

9.3 Tender submitted by fax or any other form other than hard copies with required documentation, will not be accepted and will be summarily rejected.

9.4 The Commercial bid should be neatly typed. **Handwritten offers will be rejected.** Any deviation in the offer shall lead to rejection.

9.5 The price quoted as part of the price bid should be inclusive of all taxes, transportation, installation, commissioning, successful demonstration & training, warranty (as specified in the BoQ).

9.6 The tender is based on the “Single Cover” system and all the requisite technical documents along with the Price Bid shall be enclosed in a single sealed envelope titled as given below :

“ Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur”

<< Insert Package No. and Title >>

<< Insert Tender Reference Number >>

9.7 The tender shall be signed by a person or persons duly authorized to sign on behalf of the Bidder. All pages of the tender shall be signed by the person or persons signing the tender. The bidder shall enclose a certified copy of the power of attorney authorizing the signatory or signatories to sign the tender document. This certification shall be from the Managing Director/Company Secretary/Proprietor/Partners of the firm.

9.8 The tender shall contain no alterations or additions, except those to comply with instructions issued by the Tender Inviting Authority, or as necessary to correct errors made by the bidder, in which case such corrections shall be signed by the person or persons signing the tender.

9.9 All the pages in the tender document should be signed by the bidder, after filling the prices in figures & words.

- 9.10 Bidder should submit all the documents along with the Checklist of submissions in Annexure 11 of this tender document

10 Tender Opening

- 10.1 The tenders received on the submission day as per the Notice Inviting Tender and up to the submission time as per the office clock will be taken up for opening. Tender will be opened in the presence of the bidders or their authorized representative who choose to be present and the Tender Opening/Scrutiny committee at time and date as specified in the Notice Inviting Tender. The representative of bidder who attend the tender opening must produce their identification proof and authorization letter from the companies / bidder
- 10.2 The Committee will inform the attested and unattested corrections, before the Bidders and sign all such corrections in the presence of the Bidders. If any of the Bidders or agents who were not present then, in such cases the Committee will open the tender of the absentee Bidder and take out the unattested corrections and communicate it to them. The absentee Bidder should accept the corrections without any question whatsoever.
- 10.3 In the event of the specified date of Tender opening being declared a holiday, the tenders will be opened at the same time on the next working day.
- 10.4 The bid will be evaluated by the committee of State Industries Promotion Corporation of Tamil Nadu Limited in terms of the qualification criteria. The committee reserves the right to disqualify any of the tender in case the Committee is not satisfied with the documents furnished, including the past performances.
- 10.5 Any adverse/not satisfactory remarks on the performance of previous works will entail disqualification of the tender.
- 10.6 On opening the tender, the details such as name of the bidder, address, EMD details, etc. and Price Bid will be read out.
- 10.7 The fact whether EMD and other documents as per the Checklist of Documents have been submitted shall be indicated. This shall be mere examination and is not an evaluation.

11 Evaluation of the Tender

- 11.1 The Tender Inviting Authority shall conduct initial examination of the tenders submitted in order to determine their substantial responsiveness as per the following aspects :
- 11.1.1 Meeting the Qualification Criteria as laid down in the tender documents
- 11.1.2 Signature on the crucial documents
- 11.1.3 Submission of EMD as per the indicated amount and validity period in the tender document.
- 11.1.4 Responsiveness of the tender with respect to all the technical conditions and commercial conditions set out in the tender document
- 11.2 Tenders which on above initial examination are found to be non-responsive shall be rejected

- 11.3 The Price bid will be evaluated in accordance with the Tamil Nadu Transparency in Tenders Act 1998 read with the Tamil Nadu Transparency in Tenders Rules 2000.
- 11.4 Out of the substantially responsive bids, bidders who have quoted the lowest price in accordance with the evaluation criteria shall be determined as L1
- 11.5 In determining the lowest evaluated price, the following factors shall be considered
- 11.5.1 Arithmetic errors shall be corrected
- 11.5.2 In case of discrepancy between price quoted in words and figures, the lower of the two shall be considered.
- 11.5.3 In case of discrepancy between the sum of the BOQ line items and the total price, the lower of the two shall be considered.
- 11.6 The evaluation shall include all central duties such as customs duty (for the imported items), central excise duty, GST, as a part of the price, as detailed below:
- 11.6.1 In evaluation of the price of articles which are subject to State Goods and Services Tax, Central Goods and Services Tax, Integrated Goods and Services Tax, the price has to be determined inclusive of such State Goods and Services Tax, Central Goods and Services Tax, Integrated Goods and Services Tax.
- 11.6.2 In evaluation of the price of an imported item, the price has to be determined inclusive of the customs duty.
- 11.6.3 In evaluation of the price of articles which are subject to excise duty, the price has to be determined inclusive of such excise duty.

12 Award of Contract

- 12.1 The award of the tender shall be made strictly in accordance with the “Tamil Nadu Transparency in Tenders Act 1998 and Rules 2000 and no deviation will be made.
- 12.2 The bidder who is adjudged as L1 will be invited for negotiations for further reduction of rates
- 12.3 Upon finalization of negotiated rate, the Authority will issue the Letter of Acceptance (LoA) to the successful bidder.
- 12.4 As per Clause 14(9) of Tamil Nadu Transparency in Tender Rules 2000, the Authority may increase the order quantity up to 25% on same terms and conditions.
- 12.5 Notwithstanding anything that is said herein, the Authority reserves the right to accept or reject any tender or all tenders, and to cancel the tendering process and reject all tenders, at any time prior to the award of tender, without thereby incurring any liability to any bidder or bidders or any obligation to inform the affected bidder or bidders on the grounds for the tender accepting authority’s action.

13 Notification of Award

- 13.1 The bidder whose tender has been accepted will be notified by the Tender Accepting Authority, in writing.

- 13.2 Upon furnishing the Performance Guarantee by the successful bidder and upon signing the Agreement (**Appendix 2**), the EMD will be returned to the unsuccessful bidders within a reasonable time period as indicated in the **section 7**

14 Bid Validity

- 14.1 The rate quoted in the Tender should be valid for the acceptance by the Authority for a minimum period of 90 days from the date of opening of the Tender. Escalation in the rates will not be entertained under any circumstances.

15 Terms and Conditions of the Contract

- 15.1 The Supplier shall provide onsite services support on formal request from the Authority/Technological Partner for SIIC within 3 working days.
- 15.2 All products supplied should be the latest models (at par with cited specification) offered by the vendor in the market and should not have either End of Support (EoS) or End of Life (EoL) issued during the 5 year period from the date of commercial invoice for the procurement.
- 15.3 The Supplier agrees that the cost includes all activities relating to logistics / delivery, installation, commissioning, training and monitoring, Servicing and maintenance etc. Including those of the OEs or ADs as the case may be. Key personnel from the vendor should be roped in for the successful execution of the project to the satisfaction of the Authority.
- 15.4 Materials having ISI/ISO/Engineering (if applicable) certifications shall be provided to the Authority/ Technological Partner wherever applicable.
- 15.5 Request for the supply of any substitute for any items or equipment other than mentioned in the tender, will not be entertained.
- 15.6 The Authority will have right to add/ alter any terms and conditions as per existing financial/ treasury rules and provisions applicable in Tamil Nadu if it has not been included/ addressed in the terms and conditions.
- 15.7 Delivery Terms
- 15.7.1 The delivery of the respective items as per Annexure-III to SIIC Sriperumbudur and SIIC Hosur has to be made within 30 days from the date of LoA and the Supplier is expected to make necessary logistics arrangements accordingly to the following addresses:
- 15.7.2 If the Supplier fails to deliver the equipment ordered within the allotted delivery period as specified above, the Supplier may procure goods/ services similar to those un-delivered upon such terms and in such manner as it deems appropriate from any other firm at the risk and cost of the Supplier.
- 15.7.3 All equipment should be supplied to the designated locations free from breakages. If any is found defective due to transit damage should be replaced.
- 15.7.4 The equipment shall be accompanied by the Test Report from the Original Equipment Manufacturer (OEM) and the same has to be verified by the Supplier in presence of

the Technological Partner and Project Officer concerned of SIPCOT at the delivery site.

15.7.5 The Authority shall not accept any waivers or changes to Annexure-III and the Supplier also abides and assures that that they shall not opt for.

15.7.6 The Supplier shall bear all the storage, transportation and insurance risk till installation at delivery point.

15.7.7 In case of withdrawal from the supply of items by the Supplier, a penalty of up to 30% of the value as per Annexure-III shall be levied by the Authority to the Supplier and the penalty shall also be adjusted in the upcoming payment to the Supplier.

15.8 Liquidity Damages

15.8.1 Should any consignment be delayed, liquidated damages at the rate 0.5% of the value of the delayed consignment, for each week or part there of shall be levied and recovered subject to maximum of 5% of total order value.

15.9 Installation and Inspection

15.9.1 Inspection of the equipment supplied at the delivery site shall be conducted by the Project Officer of the respective SIPCOT Industrial Parks where the SIPCOT Industrial Innovation Centers (SIICs) are located. The Technological Partner and the Supplier shall be present during the inspection.

15.9.2 Transit damages shall be checked for by the Technological Partner of the SIICs, before commencement of installation activities.

15.10 Performance Test

15.10.1 The Supplier shall demonstrate the performance of the installed equipment in complete conformity with the relevant technical specifications and performance parameters as specified in Annexure-III to the Technological Partner in the presence of Project Officer concerned of SIPCOT.

15.10.2 This demonstration should be done as stipulated by the Authority.

15.11 Payment Terms

15.11.1 The payment to the Supplier shall be made separately for each SIIC location.

15.11.2 Payment will be released as per the following terms.

- a. 90% of the value as per Annexure - III shall be paid upon completion of Installation, Demonstration, Testing, Commissioning, Submission of Manuals, Performance Test Reports submission by OEM / Supplier and verification of the same by Technological Partner. The Project Officer concerned of SIPCOT of the respective location shall certify the report submitted by Technological Partner after completion of verification and submit the same to SIPCOT Head Office (HO). The payment shall be made within 30 days from the date of receipt of the verification report by SIPCOT HO.
- b. 10% of the value as per Annexure - III shall be paid by SIPCOT HO within 30 days from the date of submission of Satisfactory Acceptance Report by the Technological Partner for taking over of the equipment and commencement of operations.

15.11.3 No advance is permissible.

15.11.4 Payment will not be considered unless the Supplier submits a certificate issued by the OEM stating that the serial numbers of the equipment supplied to the Authority by the Supplier are original.

15.11.5 The Authority also reserves the right to recover any dues from the Supplier, which is found on a later date, during audit/excess payment, after final settlement is made to them. The Supplier is liable to pay such dues to the Authority immediately on demand, without raising any dispute/protest.

15.11.6 The Authority shall not be responsible for any loss, damages and shortage during transit. Payment shall be made for the ordered material received in good condition only.

15.11.7 Payment shall be made by electronic fund transfer offered by the Bank.

15.12 Warranty

15.12.1 The equipment supplied under the contract shall carry a warranty for at least such period as mentioned in the Annexure-III from the date of submission of Satisfactory Acceptance report by the Technological Partner. The Supplier shall extend free maintenance service during the warranty period.

15.12.2 All equipment should be supplied to the designated locations free from breakages, malfunctions and manufacturing defects. If any is/are found defective due to manufacturing defect or design fault or transit damage occurred at the time of supply or within the same should be replaced by the Supplier.

15.12.3 If within the period of warranty, the goods are reported by the Authority / Technological Partner to have failed to perform as per the specifications, the Supplier shall either replace or rectify the same free of charge within a maximum of 10 days of notification of such defect received by the Supplier, provided that the goods are used and maintained by the Authority / Technological Partner as per instructions contained in the operating manual. Spares required for warranty repairs shall be provided free of cost by the Supplier.

15.13 Annual Maintenance Charges (AMC)

15.13.1 The Supplier shall provide AMC services including, but not limited to, replacement, provision of spares & repairs, software licensing and up gradation services, onsite technical support for the AMC duration indicated in Annexure – III from the date of submission of Satisfactory Acceptance report by the Technological Partner.

15.14 Training

15.14.1 The Supplier shall provide onsite/remote training services as per the requirement indicated in Annexure - III.

16 Jurisdiction of the Court

16.1 Any dispute arising out of non-fulfilment of any of the terms and conditions of this Agreement or any other dispute arising out of the arbitration award will be subject to the jurisdiction of the

Courts in the City of Chennai only.

17 Authorization by Bidder

We agree to the above terms and conditions.

SIGNATURE OF THE BIDDER:

DATE:

NAME IN BLOCK LETTERS:

DESIGNATION:

ADDRESS:

Appendix 1 : Equipment Technical Specifications & Quantity Requirements

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required	
				QTY	SKU
A		Sensors			
	1	Proximity inductive sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 10 - 30 V • Size : M30 • Sensing distance : 20 mm • Switch output : PNP • Switching element function : Normally open contact • Electrical connection : 3-core Cable with min. 2 M length 	10	Nos.
	2	Proximity inductive sensor	<ul style="list-style-type: none"> • Operating voltage range DC: 10 - 30 V • Size : M18 • Sensing distance : 8 mm • Switch output : PNP • Switching element function : Normally open contact • Electrical connection : 3-core Cable with min. 2 M length 	10	Nos.
	3	Position transmitter	<ul style="list-style-type: none"> • Operating voltage range DC: 15 - 30 V • Sensing distance : 0 - 160 mm • Analogue output : 4 - 20 mA • Travel resolution : 0.05 mm • With T slot design • With IO Link protocol • Electrical connection: 3-core Cable with min. 0.2 M length 	4	Nos.
	4	Position sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 15 - 30 V • Should be compatible with gripper • Electrical connection: Cable with 4 pin and min. 0.5 M length 	6	Nos.
	5	Proximity magnetic sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 5 - 30 V • Switch output : PNP • Switching element function : Normally open contact • With T slot design • Electrical connection: 3-core Cable with min. 4-5 M length 	8	Nos.
	6	Proximity magnetic sensor	<ul style="list-style-type: none"> • Operating voltage range AC/DC : 5 - 30 V • Switch output : PNP • Switching element function : Normally open contact • With T slot design, reed type • Electrical connection: 3-core Cable with min. 2 M length 	8	Nos.

7	Pressure Sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 15 - 30 V • Operating pressure :0-10 bar • Switch output : PNP-2Nos (or) NPS-2Nos • Switching element function : Normally open/Normally closed contact • With LCD display 	16	Nos.
8	Pressure Sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 15 - 30 V • Operating pressure : -1 to 1 bar • Switch output : PNP-2Nos (or) NPS-2Nos • Switching element function : Normally open/Normally closed contact • With LCD display 	10	Nos.
9	Flow Sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 15 - 30 V • Analogue output :0-10 V • Operating pressure : 0-10 bar • Flow rate: Min. 1000 LPM • Switch output : PNP-2Nos (or) NPS-2Nos • Switching element function : Normally open/Normally closed contact • With LCD display 	4	Nos.
10	Force Sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 15 - 30 V • Force measuring range : 0 - 12 kN • Limit load : 30 kN • Analogue output : 10-30 V , 4 - 20 mA 	4	Nos.
11	Retro Reflective Sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 10 - 30 V • At work range : 0 - 1000 mm • Material electrical contact: Brass, gold plated • Max. current output : 50 mA • Light colour & type : Red LED 	6	Nos.
12	Reflector	<ul style="list-style-type: none"> • Mounting: screw fixing • Material housing: suitable material 	6	Nos.
13	Gap sensor to detect contactless distance	<ul style="list-style-type: none"> • Operating voltage range DC : 15 - 30 V • Supply pressure : 0.8 to 1.6 bar • Sensing range : 20 - 200 µm • Max. current output : 100 mA • Switch output : PNP (light switching), NPN (dark switching) 	6	Nos.
14	Distance Sensor	<ul style="list-style-type: none"> • Operating voltage range DC: 15 - 30 V • Distance measuring range: 40 - 100 mm • Max. current output: 100 mA • Switch output: PNP (light switching), NPN (dark switching) • Light colour & type: Red & LED • With IO Link protocol 	6	Nos.
15	Colour Sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 10 - 30 V • Distance measuring range : 12 - 30 mm • Max. current output : 100 mA • Switch output : PNP 	4	Nos.

16	Signal converter	<ul style="list-style-type: none"> • Operating voltage range DC: 15 - 30 V • Signal range: 0 - 10 V • Max. current output: 100 mA • Switch output: PNP-2Nos (or) NPS-2Nos • Switching element function: Normally open/Normally closed contact • With IO Link protocol 	6	Nos.
17	Pressure sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 15 - 30 V • Operating pressure : 0-10 bar • Switch output : PNP-2Nos (or) NPS-2Nos • Analogue output : 0-10 V, 4-20 mA • Switching element function: Normally open/Normally closed contact • With LCD display • With IO Link protocol 	10	Nos.
18	Pressure Sensor	<ul style="list-style-type: none"> • Operating voltage range DC: 15 - 30 V • Operating pressure: -1 to +1 bar • Switch output: PNP-2Nos (or) NPS-2Nos • Analogue output: 0-10 V, 4-20 mA • Switching element function: Normally open/Normally closed contact • With LCD display • With IO Link protocol 	10	Nos.
19	Flow sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 18 - 30 V • Analogue output : 0-10 V, 4-20 mA • Operating pressure : 0-12 bar • Flow rate : Min. 100 LPM • Switch output : PNP-2Nos (or) NPS-2Nos • Switching element function : Normally open/Normally closed contact • With LCD display • With IO Link protocol 	6	Nos.
20	Distance sensor	<ul style="list-style-type: none"> • Operating voltage range DC: 10 - 30 V • Distance measuring range: 40 ... 100 mm • Max. current output: 100 mA • Switch output: PNP (light switching), NPN (dark switching) • Light colour & type: Red & Laser • With IO Link protocol 	6	Nos.
B	Sensor Accessories			
21	Connecting cable with rectangle plug	<ul style="list-style-type: none"> • Rectangle design with 4 pin at one end and other end bare cables • Operating voltage range DC : 0 - 30 V • Length of the cable : Min. 3-4 m 	20	Nos.
22	Mounting bracket for sensors	<ul style="list-style-type: none"> • Material : Noncorrosive alloy steel • Type : L bracket with through hole 	10	Nos.

	23	Connecting cable with M12 plug	<ul style="list-style-type: none"> • M12 plug at one end and other end bare cables • Operating voltage range AC/DC : 0 - 60 V • Length of the cable : Min. 10 m 	6	Nos.
	24	Connecting cable with M12 plug	<ul style="list-style-type: none"> • M12 plug at one end and other end bare cables • Operating voltage range AC/DC : 0 - 250 V • Length of the cable : Min. 5 m 	6	Nos.
C		Grippers			
	25	Gripper with 3 fingers	<ul style="list-style-type: none"> • Number of gripper fingers : 3 • Position detection : Hall effect sensor • Mode of Operation : Double acting • Operating pressure : 2 - 8 bar • Operating medium : Pneumatic 	2	Nos.
	26	Gripper Bellows with	<ul style="list-style-type: none"> • Type: Bellow gripper • Stroke per gripper jaw : 15.5 mm • Position detection : Proximity sensor • Mode of Operation : Single acting closed • Operating pressure : 4 - 8 bar • Operating medium : Pneumatic 	4	Nos.
	27	Suction cup	<ul style="list-style-type: none"> • Cup diameter: Min. 50 mm • Suction cup shape: Round flat • Suction cup material: NBR • Operating pressure: -0.7 bar • Operating medium: Pneumatic 	4	Nos.
	28	Suction cup	<ul style="list-style-type: none"> • Cup diameter : Min. 50 mm • Suction cup shape : Round extra deep • Suction cup material : NBR • Operating pressure : -0.7 bar • Operating medium : Pneumatic 	4	Nos.
	29	Suction cup	<ul style="list-style-type: none"> • Cup diameter: Min. 50 mm • Suction cup shape: Round bellow • Suction cup material: NBR • Operating pressure: -0.7 bar • Operating medium: Pneumatic 	4	Nos.
	30	Holder for Suction cups	<ul style="list-style-type: none"> • Assembly position : Vertical • Design structure : Vacuum connection at side • Operating medium : Pneumatic • Mounting type : With Internal thread 	4	Nos.
	31	Adaptive gripper with accessories	<ul style="list-style-type: none"> • Size : 20 • Stroke : 66 mm • Load Capacity : 1 Kg 	2	Nos.
	32	Vacuum generator	<ul style="list-style-type: none"> • Valve function : 2/2 solenoid with manual override • Operating Pressure : 2 - 8 bar • Max. suction rate with respect to atmosphere: 16 l/min 	4	Nos.

D		Pneumatic Drives			
	33	Double acting cylinder	<ul style="list-style-type: none"> • Piston diameter : 32 mm • Stroke : 150 mm • Piston rod thread : M10 • Cushioning : Pneumatic cushioning adjustable at both ends • Operating pressure : 0.6 – 12 bar 	2	Nos.
	34	Double acting cylinder, Round	<ul style="list-style-type: none"> • Piston diameter : 10 mm • Stroke : 50 mm • Piston rod thread : M4 • Cushioning: Flexible cushioning rings at both ends • Operating pressure : 1.5 – 10 bar 	2	Nos.
	35	Double acting cylinder, Round	<ul style="list-style-type: none"> • Piston diameter: 12 mm • Stroke: 100 mm • Piston rod thread: M4 • Cushioning: Flexible cushioning rings at both ends • Operating pressure: 1.5 – 10 bar 	2	Nos.
	36	Double acting cylinder	<ul style="list-style-type: none"> • Piston diameter : 32 mm • Stroke : 80 mm • Piston rod thread : M10 • Cushioning : Flexible cushioning rings at both ends • Operating pressure : 0.6 – 10 bar 	2	Nos.
	37	Single acting cylinder	<ul style="list-style-type: none"> • Piston diameter: 10 mm • Stroke: 50 mm • Piston rod thread: M4 • Cushioning: Flexible cushioning rings at both ends • Operating pressure: 1.5 – 10 bar 	20	Nos.
	38	Single acting expanding cylinder	<ul style="list-style-type: none"> • Size : 5 mm • Nominal length : 100 mm • Operating pressure : 0 – 6 bar Material membrane : AR Material nut : Steel	14	Nos.
	39	semi-rotary actuator	<ul style="list-style-type: none"> • Size: 32 mm • Design: Vane • Mode of operation: double acting • Operating pressure: 2 – 8 bar • Swivel angle: 0 ... 270 deg • Position detection: For proximity sensor • Pneumatic connection : G 1/8 	2	Nos.

	40	semi-rotary actuator	<ul style="list-style-type: none"> • Size: 25 mm • Design : Vane • Mode of operation : double acting • Operating pressure : 2 – 8 bar • Swivel angle : 0 - 270 deg • Position detection : For proximity sensor 	2	Nos.
E		Valves			
	41	One way Flow control Valve	<ul style="list-style-type: none"> • Valve function : One-way flow control function for exhaust air • Nominal flow rate : Min. 185 LPM • Pneumatic connection for port 1: For tubing outside diameter 6 mm • Pneumatic connection for port 2: 1/8" • Adjustment : Knurled screw • Operating pressure: 0.2 – 10 bar 	10	Nos.
	42	One way Flow control Valve	<ul style="list-style-type: none"> • Valve function: One-way flow control function for exhaust air • Nominal flow rate: Min. 100 LPM • Pneumatic connection for port 1: For tubing outside diameter 4 mm • Pneumatic connection for port 2: M5 • Adjustment: Knurled screw • Operating pressure: 0.2 – 10 bar 	8	Nos.
	43	3/2 - way Solenoid Valve	<ul style="list-style-type: none"> • Size : 25 • Valve function : 3/2 closed, monostable • Type of actuation : Electrical • Nominal flow rate : 1000 l/min • Operating pressure : 2 - 8 bar • Design structure : Piston slide • Type of reset : Spring • Manual override : Detenting pushing • Pilot air supply : Piloted • Operating medium : Pneumatic • Pneumatic connection: G 1/4 • Operating Voltage: 24V DC 	4	Nos.
	44	3/2 - way solenoid valve	<ul style="list-style-type: none"> • Size: 25 • Valve function : 3/2 closed, monostable • Type of actuation : Electrical • Nominal flow rate : 1000 l/min • Operating pressure : 2 - 8 bar • Design structure : Piston slide • Type of reset : Spring • Operating medium : Pneumatic • Pneumatic connection: For tubing outside diameter 6 mm • Operating Voltage: 12V DC 	10	Nos.

	45	5/2 Solenoid Valve	<ul style="list-style-type: none"> • Size: 10 • Valve function: 5/2 closed, bistable • Type of actuation: Electrical • Nominal flow rate: 195 l/min • Operating pressure: 1.5 - 7 bar • Design structure: Piston slide • Operating medium: Pneumatic • Pneumatic connection: M5 • Operating Voltage: 24V DC 	6	Nos.
	46	5/2 Solenoid Valve	<ul style="list-style-type: none"> • Size: 20 • Valve function : 5/2 closed, bistable • Type of actuation : Electrical • Nominal flow rate : 550 l/min • Operating pressure : 1.5 - 8 bar • Design structure : Piston slide • Operating medium : Pneumatic • Pneumatic connection : 1/8" • Operating Voltage : 24V DC 	6	Nos.
	47	5/2 Solenoid Valve	<ul style="list-style-type: none"> • Size: 10 • Valve function : 5/2 closed, bistable • Type of actuation : Electrical • Nominal flow rate : 195 l/min • Operating pressure : 1.5 - 7 bar • Design structure : Piston slide • Operating medium : Pneumatic • Pneumatic connection : M5 • Electrical connection : horizontal, 2 pin • Operating Voltage : 24V DC 	4	Nos.
	48	one-way flow control valve	<ul style="list-style-type: none"> • Valve function: One-way flow control • Nominal flow rate: Min. 110 LPM • Pneumatic connection: For tubing outside diameter 4 mm • Adjustment: Knurled screw • Operating pressure: 0.2 – 10 bar 	10	Nos.
F		Manifold Assembly			
	49	Valve manifold with 5/2 solenoid valve	<ul style="list-style-type: none"> • Size: 10 • Valve function : 5/2 double solenoid – 5 Nos. • Operating Pressure : -0.9 - 10 bar • Valve type : Subbase valve • Exhaust port : Silencer • Operating voltage : 24 V DC 	2	Nos.
	50	Valve manifold with 5/3 solenoid valve	<ul style="list-style-type: none"> • Size: 10 • Valve function : 5/3 double solenoid, mid position exhausted – 5 Nos. • Operating Pressure : -0.9 - 10 bar • Valve type : Subbase valve • Exhaust port : Silencer • Operating voltage : 24 V DC 	2	Nos.

	51	Valve manifold with 3/2 solenoid valve	<ul style="list-style-type: none"> • Size: 10 • Valve function: 3/2, NC solenoid– 3 Nos. • Operating Pressure: -0.9 - 10 bar • Valve type: Subbase valve • Exhaust port: Silencer • Operating voltage: 24 V DC 	2	Nos.
G		Pneumatic Accessories			
	52	Plug socket with cable for solenoids	<ul style="list-style-type: none"> • Electrical connection : Plug socket • Cable length : min. 2 m • Cable dia : Min. 6 mm • Operating voltage : 24 V DC • Switching position indicator: LED 	10	Nos.
	53	Plug socket with cable for solenoids	<ul style="list-style-type: none"> • Electrical connection : Plug socket • Cable length : min. 2 m • Cable dia : Min. 5 mm • Operating voltage : 24 V DC • Switching position indicator: LED 	26	Nos.
	54	Connecting cable for proximity sensors	<ul style="list-style-type: none"> • Operating voltage range AC/DC: 0 - 60 V • M8 plug at one end and other end bare cables • Length of the cable: Min. 5 m 	8	Nos.
	55	Plug socket with cable for solenoids	<ul style="list-style-type: none"> • Electrical connection: Plug socket, 3 socket, 2 wires • Cable length: min. 2 m • Operating voltage: 24 V DC 	26	Nos.
	56	Connecting cable for proximity sensors	<ul style="list-style-type: none"> • Operating voltage range AC/DC: 0 - 60 V • 4pin rectangular plug at one end and other end bare cables • Length of the cable: Min. 2 m 	10	Nos.
	57	Pneumatic connector	<ul style="list-style-type: none"> • Type: Straight • Pneumatic connection port-1:1/4" male thread • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: - 0.95 - 14 bar 	20	Nos.
	58	Pneumatic connector	<ul style="list-style-type: none"> • Type: Straight connection • Pneumatic connection port 1:M5 male thread • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: - 0.95 to 14 bar 	8	Nos.

59	Pneumatic connector	<ul style="list-style-type: none"> • Type: Straight connection • Pneumatic connection port 1:M5 male thread • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: - 0.95 to 14 bar 	30	Nos.
60	Pneumatic connector	<ul style="list-style-type: none"> • Type: Straight connection • Pneumatic connection port-1:1/8" male thread • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: - 0.95 to 14 bar 	40	Nos.
61	Pneumatic connector	<ul style="list-style-type: none"> • Type: L connection • Pneumatic connection port 1:M3 male thread • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: - 0.95 ... 14 bar 	12	Nos.
62	Pneumatic connector	<ul style="list-style-type: none"> • Type: L connection • Pneumatic connection port 1:1/8" female thread • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: - 0.95 to 14 bar 	10	Nos.
63	Pneumatic connector	<ul style="list-style-type: none"> • Type: X connection • Pneumatic connection port 1: For tubing outside diameter 4 mm • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: - 0.95 to 14 bar 	10	Nos.
64	Pneumatic connector	<ul style="list-style-type: none"> • Type: X connection • Pneumatic connection port 1: For tubing outside diameter 6 mm • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: - 0.95 to 14 bar 	10	Nos.
65	Pneumatic connector	<ul style="list-style-type: none"> • Type: X connection • Pneumatic connection port 1: For tubing outside diameter 8 mm • Pneumatic connection port 2: For tubing outside diameter 8 mm • Temperature dependent operating pressure: - 0.95 to 14 bar 	10	Nos.

66	Pneumatic connector	<ul style="list-style-type: none"> • Type: Push/pull sleeve • Pneumatic connection port 1: Push in sleeve for 8 mm • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: - 0.95 to 14 bar 	10	Nos.
67	Pneumatic connector	<ul style="list-style-type: none"> • Type: Bulkhead • Pneumatic connection port 1: For tubing outside diameter 4 mm • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: - 0.95 to 14 bar 	10	Nos.
68	Pneumatic connector	<ul style="list-style-type: none"> • Type: Bulkhead • Pneumatic connection port 1: For tubing outside diameter 6 mm • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: - 0.95 to 14 bar 	10	Nos.
69	Pneumatic connector	<ul style="list-style-type: none"> • Type: Bulkhead • Pneumatic connection port 1: For tubing outside diameter 8 mm • Pneumatic connection port 2: For tubing outside diameter 8 mm • Temperature dependent operating pressure: - 0.95 to 14 bar 	10	Nos.
70	Pneumatic connector	<ul style="list-style-type: none"> • Type: T connection • Pneumatic connection port 1: For tubing outside diameter 4 mm • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: - 0.95 to 14 bar 	10	Nos.
71	Pneumatic connector	<ul style="list-style-type: none"> • Type: T connection • Pneumatic connection port 1: For tubing outside diameter 6 mm • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: - 0.95 to 14 bar 	10	Nos.
72	Pneumatic connector	<ul style="list-style-type: none"> • Type: T connection • Pneumatic connection port 1: For tubing outside diameter 8 mm • Pneumatic connection port 2: For tubing outside diameter 8 mm • Temperature dependent operating pressure: - 0.95 to 14 bar 	10	Nos.

73	Pneumatic connector	<ul style="list-style-type: none"> • Type: Y connection • Pneumatic connection port 1: For tubing outside diameter 4 mm • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: - 0.95 to 14 bar 	10	Nos.
74	Pneumatic connector	<ul style="list-style-type: none"> • Type: Y connection • Pneumatic connection port 1: For tubing outside diameter 6 mm • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: - 0.95 to 14 bar 	10	Nos.
75	Pneumatic connector	<ul style="list-style-type: none"> • Type: Y connection • Pneumatic connection port 1: For tubing outside diameter 8 mm • Pneumatic connection port 2: For tubing outside diameter 8 mm • Temperature dependent operating pressure: - 0.95 to 14 bar 	10	Nos.
76	Plastic tubing	<ul style="list-style-type: none"> • Outside diameter : 4 mm • Inside diameter : 2.6 mm • Temperature dependent operating pressure : - 0.95 to 10 bar • Colour : Translucent blue 	20	Nos.
77	Plastic tubing	<ul style="list-style-type: none"> • Outside diameter: 6 mm • Inside diameter: 4 mm • Temperature dependent operating pressure: - 0.95 to 10 bar • Colour: Translucent blue 	20	Nos.
78	Plastic tubing	<ul style="list-style-type: none"> • Outside diameter: 8 mm • Inside diameter: 5.7 mm • Temperature dependent operating pressure: - 0.95 to 10 bar • Colour: Translucent blue 	10	Nos.
79	Silencer	<ul style="list-style-type: none"> • Material of silencer insert: Bronze • Pneumatic connection: M5 male thread • Sound pressure level: 72 dB(A) 	20	Nos.
80	Silencer	<ul style="list-style-type: none"> • Material of silencer insert: Bronze • Pneumatic connection: 1/8" male thread • Sound pressure level: 76 dB(A) 	12	Nos.
81	Blanking plug	<ul style="list-style-type: none"> • Pneumatic connection, port 1: M5 male thread • Mounting type: Internal hex • With sealing washer 	10	Nos.
82	On/Off valve	<ul style="list-style-type: none"> • Operating pressure: 0 to 16 bar • Type of actuation: manual • Valve function: 3/2 bistable 	8	Nos.

	83	Shut Off valve	<ul style="list-style-type: none"> • Operating pressure: -0.95 to 10 bar • Type of actuation: manual • Valve function: 2/2 bistable • Nominal flow rate: Min. 270 LPM • Pneumatic connection: For tubing outside diameter 6 mm 	8	Nos.
	84	FRL unit	<ul style="list-style-type: none"> • Pneumatic connection: M5 female thread • Standard nominal flow rate: 80 l/min • Pressure regulation range: 0.5 to 7 bar • Grade of filtration: 5 µm 	4	Nos.
	85	FRL unit	<ul style="list-style-type: none"> • Pneumatic connection: 1/8" female thread • Standard nominal flow rate: 700 l/min • Pressure regulation range: 0.5 to 12 bar • Grade of filtration: 40 µm 	4	Nos.
	86	Mounting bracket	Foot mounting bracket set for double acting cylinder	4	Nos.
	87	Mounting bracket for Proximity sensor	<ul style="list-style-type: none"> • Size: 10 	8	Nos.
H		Controllers			
	88	PLC	<ul style="list-style-type: none"> • Digital input : Min. 16 Nos. • Digital output : Min. 8 Nos. • IO link master : 4 ports • Connectivity : Ethercat 	2	Nos.
	89	HMI Unit	<ul style="list-style-type: none"> • 4" operator unit, wide touchscreen • PLC interface: Ethernet/RS485 	2	Nos.
I		Air Preparation Unit			
	90	FRL unit with on/off valve	<ul style="list-style-type: none"> • Actuator lock: Rotary knob with lock • Condensate drain: Manual rotary • Design structure: Filter regulator with pressure gauge proportional standard oil mist lubricator • Grade of filtration: 40 µm • Operating pressure: 1 - 15 bar • Nominal flow rate: 1500 l/min • Operating Medium: Pneumatic • Pneumatic connection: 1/2" female thread 	2	Nos.
J		Training Kit			

91	Mobile workstation for pneumatics with two drawer unit	<p>Mobile workstation should contain:</p> <ul style="list-style-type: none"> + Double sided versatile Aluminium or steel structure based frame with grooves to mount components easily that will be used by the user to perform his work. + Double sided Single row rack to hold pneumatic, electronics components. + Two drawer units inside the workstation each should have at least four drawer units to keep working components. + All supporting accessories should be included. + Expected size of 50*35*35 inches. 	2	Nos.
92	Basic Pneumatic Kit	<p>The Pneumatic Training Kit should contain</p> <ul style="list-style-type: none"> • 2x Double acting cylinder with 20 mm piston diameter and 100 mm stroke length • 1x Single acting cylinder with 20 mm piston diameter and 50 mm stroke length • 1x 5/2-way pneumatic valve with single side actuation, return spring and Poppet seat design • 3x 5/2-way pneumatic actuated valve with double side actuation, Poppet set design • 3x 3/2-way valve with push button actuation (Black), single side actuation return spring, normally closed and poppet valve design. • 1x 3/2-way valve with push button actuation (Yellow), single side actuation return spring, normally opened and poppet valve design. • 1x 5/2-way valve with selector switch actuation (Black), single side actuation returns spring and poppet valve design • 1x 3/2-way valve with roller lever actuation, idle return, single side actuation return spring, normally closed and poppet valve design • 3x 3/2-way with roller lever actuation, single side actuation return spring, normally closed and poppet valve design • 2x Pressure Gauge with display range 0-16 bar • 1x Quick Exhaust Valve • 1x Shuttle valve (OR) • 1x Dual pressure valve (AND) • 1x Time delay valve N.C. • 2x One-way flow control valve • 1x Pressure sequence valve • 1x Filter regulator with pressure gauge and On/Off valve • 1x Pressure regulator with gauge • 1x Manifold with 6 self-closing non-return valves • 1x Plastic tubing, 4 mm blue color, 20 M • 1x Plastic tubing, 8 mm blue color, 5 M • 10x T-Connector, 4 mm 	2	Nos.

93	Basic Electro Pneumatic training kit	<p>The Electro Pneumatic Training Kit must contain</p> <ul style="list-style-type: none"> • 1x 3/2-way solenoid valve with return spring, piston spool design, manual override, and LED, NC • 1x 5/2-way single solenoid valve with return spring, piston spool design, manual override, and LED • 1x 5/2-way double solenoid valve, piston spool design, manual override, and LED • 1x Relay unit with three relays, 4 changeover switches, connection via 4 mm safety sockets • 1x Signalling unit with an illuminated pressure switch, three illuminated push button, each with a mini bulb, connection via 4 mm safety sockets • 2x Proximity sensor with light emitting diode and integrated protective circuit, reed contact, output through 4mm safety plug • 2x Cylinder mounting kit for sensor with screw • 1x PE converter, it should be operated as three functions like pressure switch, vacuum switch and differential pressure switch. • 2x Electrical limit switch (1 left act. + 1 right act.) with micro switch, roller operated. It should be used as a N/O contact, N/C contact or a changeover switch • 1x 24 V DC Power supply unit, input voltage is 85 – 265 V AC, Output voltage is 24 V DC via 4 mm safety sockets • 1x Connection cables should be in red and blue colours, each with 4 mm plugs covered/Insulated for safety purpose in different lengths 	2	Nos.
94	Automation technology learning system	<p>The complete package consists of three stations; stacking magazine station, conveyor station and handling station, a compressor, three interface modules to connect the PC to the station, three CDs with simulation and controller software and manual and practising documents and comprehensive accessories</p> <ul style="list-style-type: none"> + 1 stacking magazine station + 1 conveyor station + 1 handling station + 1 compressor + 3 x control packages with interface for PC/station and a mains cable 	2	Set

	95	Bio-inspired robotic Kit	<p>Bio-inspired robotic Kit contains the material to build three different robots</p> <ul style="list-style-type: none"> + Bio-inspired fish + Bio-inspired elephant + Bio-inspired chameleon <p>Components of the kit should be:</p> <ul style="list-style-type: none"> + Transparent body (approx. length: 200 mm, diameter 75 mm) + 3 - digital servos with min. 30 Ncm torque, + 1 - waterproof servo with min. 30 Ncm torque + Microcontroller with 32 bit Arduino compatible CPU and WLAN access point + Necessary shield for microcontroller + 13 - high precision injection molded construction parts, including 3 fin rays (1 large, 2 small) + High Quality Cardboard box with foam insert for easy and safe storage of the components + Control with every smartphone, tablet with WLAN and Web Browser + Access to complete online learning environment, including tutorials, background about bionics, videos, learning paths with different time frames, download area with worksheets, CAD files, circuits and programs 	16	Set
	96	Microcontoller for bio inspired robot	Microcontroller with 32 bit Arduino compatible CPU and WLAN access point	10	Nos.
K		Softwares			

	97	Pneumatic simulation software	<p>Number of users : 3</p> <p>The simulation tool pneumatics should include a circuit creation tool, a high-performance simulation tool and a comprehensive e-learning tutorial. This software package should be provide keeping in mind that this should be a handy tool for the trainers in Educational Training</p> <p>Institutes & corporate training centres to go hand in hand with the latest in the industry.</p> <p>With this software,</p> <ul style="list-style-type: none"> + The software should be possible to simulate circuits of pneumatics, electro pneumatics, servo pneumatics, vacuum technology, sensor technology, safety and digital technologies. + Functional features of products & components can be understood + The virtual cut sectional animation lets the students to know the internal details of the product & to understand the functions simultaneously + Trainers can explain about the products and can educate the students at a very short period, so as to have ample time on using trainer kits to gain more practical knowledge + Even a non-technical person can easily understand the concepts of pneumatic products 	2	Nos.
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	98	Software for creating virtual Learning Environments	<p>Number of Users: 1</p> <p>The software should be industrially tested, extremely powerful platform for 3D modelling, 3D simulation models for automation technology.</p> <p>The software must have different mechatronics modules, Process control modules, Mobile robot, Robotic module virtually. The software should control and simulate more than 100 type of simple to complex models like mechatronics, robotics, process etc., (virtually).</p> <p>The software should cover main areas in:</p> <ul style="list-style-type: none"> + Robot programming + PLC programming + Troubleshooting + Production planning and production control <p>It should combine the following functions in one common interface.</p> <ul style="list-style-type: none"> + 3D real-time simulation + System and production line design based on model libraries + The program offers an integrated training program and a variety of different robot models. + All the required basics for automation with robots should be possible by in built applications. + Numerous graphics and animations to explain technical terms and facts, videos on a large number of industrial applications involving robots. + Sample programs for every model, technical documentation including instructions on processing. + Communication via OPC client/server + Simulation of the mobile robot platform + Virtual human with 30 independent degrees of freedom + The complex model library contains 3D process models of selected mechatronic stations, various belt and warehouse systems. + In manual mode, individual step movements should be made 	2	Nos.
L		Accessories			

	99	Valve terminal with Control app - 1	<p>Operating pressure: 3 - 8 bar</p> <ul style="list-style-type: none"> • Valve function: can be allocated using the motion app • Piezo technology valves with configurable functionality which should operated via software must control the following parameters like pressure, flow, vacuum and position <p>By using the system, student should able to learn how to control following:</p> <ul style="list-style-type: none"> • Controlling Pneumatic Cylinder speed with the help of Mobile apps. • Controlling Pneumatic cylinder position in closed loop with the help of Mobile apps. • Controlling Pneumatic Gripping force with the help of Mobile apps. • Controlling Vacuum Force by Varying input pressure from Valve terminal. • End Position Cushioning with help of external sensor and DCV valve terminals (Soft Stop and Soft Start) • Valve configuration and its functionality excessed via software on any one valve (i.e. configuring valve as 3/2, 4/2 or 4/3 via software) • PLC with Min. 8 DI/DO 	2	Set
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	100	Valve terminal with Control app - 2	<p>The setup should have Piezo technology valves with configurable functionality which should operated via software must control the following parameters like pressure, flow, vacuum and position – 1 No.</p> <ul style="list-style-type: none"> • Double acting cylinder with 32 mm piston dia, min. 100 stroke length Pneumatic cushioning adjustable at both ends with pneumatic connector – 1 No. • Double acting cylinder with 32 mm piston dia, min. 100 stroke length Flexible cushioning rings/plates at both ends, with pneumatic connector – 1 No. • vacuum generator with ejector pulse, Max. suction rate with respect to atmosphere: 48.8 l/min -1 No. • air reservoir, 750 ml, alloy steel, non-corrosive metal tank – 1 No. • Pressure sensor, Analogue output 0-10 V, 4-20 mA, IO link feature – 1 No. • Precision pressure regulator with ¼” female thread -1 No. • Accessories – 1 No. • Small box to store all items – 1 No. <p>By using the system, student should able to learn how to control following:</p> <ul style="list-style-type: none"> • Controlling Pneumatic Cylinder speed with the help of Mobile apps. • Controlling Pneumatic cylinder position in closed loop with the help of Mobile apps. • Controlling Pneumatic Gripping force with the help of Mobile apps. • Controlling Vacuum Force by Varying input pressure from Valve terminal. • End Position Cushioning with help of external sensor and DCV valve terminals (Soft Stop and Soft Start) • Valve configuration and its functionality excessed via software on any one valve (i.e. configuring valve as 3/2, 4/2 or 4/3 via software) 	2	Set
M		Training / Consultancy			
	101	<p>1. Comprehensive onsite/remote training services covering all hardware/software modules listed above offered within 30 days from the delivery of items, covering a min. of 30 users/trainees.</p> <p>2. Additional annual refresher/upgrade training for a min. of 10 days offered onsite/remote for upto 1 year from the date of first training session.</p> <p>3. Consultancy for Product development 3 days every year for 5years</p>		1	Nos.

N		Warranty		
	102	1. Minimum 1 year warranty for all hardware/software items including onsite technical support & service, replacement, spares & repairs.	1	Nos.

Appendix 2 : Draft Agreement

Draft Agreement

This AGREEMENT (hereinafter called the “Agreement”) is made on the _____ day of the month of _____ 2022, between, **State Industries Promotion Corporation of Tamil Nadu Limited (SIPCOT)**, a company registered under the Companies Act, 1956 and having its Registered Office at No.19-A, Rukmani Lakshmipathy Road, Egmore, Chennai-600008, represented by and hereinafter referred to as the “Authority” or “SIPCOT”, which term shall, unless repugnant to the context otherwise requires mean and include its representatives, administrators, successors and assigns on the One Part;

AND

M/s.represented by having their Registered Office at hereinafter referred to as the “Supplier”, which term shall, unless repugnant to the context otherwise requires, mean and include their representatives, administrators, successors and assigns on the other Part;

1. WHEREAS the Authority called for “Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur - Package vide Tender Reference No. and the bids were opened on;
 2. WHEREAS the Supplier has agreed to provide Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur - Package subject to the conditions set forth in the Tender Reference No. The Authority after evaluation of all the bids submitted by the bidders called for the negotiations based on the Tender Scrutiny Committee’s recommendation and had finalized the Supplier and Letter of Acceptance (LoA) was issued to the Supplier vide Letter No. more fully referred in Annexure I.
 3. WHEREAS the Supplier has acknowledged the LoA and agreed to provide Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur - Package upon subject to the conditions set forth in this Agreement read with terms and conditions of Contract in Annexure IV and as described in Annexure – III as the ‘Probable quantities’ for a sum of Rs./- (Rupees) inclusive of all taxes, duties, fee levies, insurance, other impositions and GST quoted as detailed in Annexure III.
 4. WHEREAS the Supplier has remitted a sum of Rs./- (Rupees) towards Earnest Money Deposit, along with the tender vide DD. No. and the EMD amount shall be refunded to the Supplier after submission of required Performance Guarantee, which is as prescribed in Clause 7 of the tender document to the satisfaction of the Authority.
 5. WHEREAS the Supplier in lieu of the Performance Guarantee in the form of valid Bank Guarantee as mentioned in Clause 8 of the tender document has deposited with the Authority a sum of Rs./- (Rupees Only) as interest free Security Deposit vide DD. No., Bank, dated and the Security Deposit shall be released only after the expiry of the warranty period mentioned in Clause 2.1 of the tender document after deducting any loss or damage caused or suffered or would be caused to or suffered by the Authority by reason of any breach of this agreement by the Supplier if any. It shall be the responsibility of the Supplier to maintain the Security Deposit at Rs./- (Rupees Only) throughout the contract period (including warranty period).
 6. WHEREAS the Supplier has agreed to execute upon and subject to the terms and conditions set forth in this Agreement as contained in all the Annexures forming part of this contract and Annexure – III as the Probable quantities and comply with the delivery and other terms noted in this Agreement.

NOW THIS AGREEMENT WITNESSETH as follows:

1. In consideration of the payment of the said sum of **Rs./- (Rupees**) inclusive of all taxes, duties, fee levies, insurance, other impositions and GST or such other sum as may be arrived at under the clause of this Agreement relating to payment, the Supplier will upon and subject to the said conditions, supply, install and fulfil their obligations as per the specification and to the extent of the probable quantities shown in Annexure-III of this Agreement.
2. All payments will be made to the Supplier only after the receipt of verification/satisfactory acceptance certificate/report by the Project Officer concerned of SIPCOT or Technological Partner as specified in Section 4.11, Annexure-IV of this Agreement.
3. In this Agreement words and expression shall have the same meanings as are respectively assigned to them in the Terms and Conditions of contract hereinafter referred to.
4. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz:
 - a) Annexure I - Letter of Acceptance (LoA) of award of Tender No.;
 - b) Annexure II - Scope of Services;
 - c) Annexure III - Technical Specifications and Price Schedule;
 - d) Annexure IV - Terms and Conditions of Contract;
 - e) Annexure V - Performance Bank Guarantee;
 - f) Annexure VI - Letter of Authorization from Original Equipment Manufacturer;
 - g) Annexure VII - Self declaration on the License/Certification for Equipment;
5. Any other subsequent relevant documents forming part of the contract shall also be construed as part of this Agreement once signed by both the parties.
6. In consideration of the payments to be made by the Authority to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Authority to initiate and take necessary steps to implement/comply this agreement and execute the technical infrastructure provision services with effect from the date of signing of this agreement as per the provisions of this Agreement.
7. The Authority hereby covenants to pay the Supplier in consideration of the execution and completion of the procurement of goods and services as per the provisions mentioned in

4.11 of Annexure IV of this Agreement at the contract price of Rs./-
(Rupees).

8. Being the sum stated in the letter of acceptance subject to such additions thereto or deductions thereof as may be made under the provisions of this agreement at the times in manner prescribed by the contract.

9. Duration and Termination

- a) This Supplier shall comply with the terms and conditions of this Agreement and deliver the respective items mentioned in Annexure III as per Clause 4.7 of Annexure IV of this Agreement and further shall complete the installation of the items within fifteen (15) days from the date of delivery of the respective items.
- b) It is agreed between the Parties that the Authority reserves the right to terminate the Agreement at any time on account of non-fulfilment or breach of any contractual obligation.

10. REPRESENTATIONS AND WARRANTIES

Each of the Parties hereby represents and warrants to the other Party that:

- a) it has full power, capacity and authority to execute, deliver and perform this Agreement.
- b) this Agreement upon execution and delivery by it shall constitute a legal and binding obligation on both parties and it would be enforceable in accordance with the terms.

11. Indemnity and Liability

Notwithstanding anything to the contrary contained herein, the Supplier will indemnify and hold the Authority, its directors, employees and/or agents harmless against any demands, claims, actions or proceedings that may be initiated against the Authority or any expense, costs, losses or injuries incurred or suffered by the Authority, by reason of any (i) damage caused on the asset of SIPCOT by the act of Supplier, (ii) breach of any terms in this Agreement, (iii) any misconduct or negligence act or deed or any act of commission or omission of the Supplier which is contrary to the terms hereof and (iv) if in the opinion of the Authority any act of the Supplier which would in any manner jeopardize the Authority rights under this Agreement.

12. Miscellaneous

- a) This Agreement constitutes the entire agreement between the Parties regarding the subject matter and overrides any prior agreements (whether oral or written) between the Parties in this respect.
- b) Nothing herein will be construed as creating any partnership, joint venture or any other similar relationship between the Parties. Neither Party, nor any employee, agent or other representative of a Party, shall be an employee or an agent of the other Party. The Parties agree that, in performing their responsibilities pursuant to this Agreement, they are in the

position of independent contractors. The Parties shall have no relationship or liabilities other than as set forth in this Agreement.

- c) Any terms or conditions of this Agreement may be amended with the written consent of both the Parties.
- d) The failure by any Party to exercise or enforce any legal right or remedy which is contained in this Agreement will not be deemed to be a waiver of such rights and remedies.
- e) The rights granted in this Agreement cannot be assigned or transferred by either Party without the prior written approval of the other Party.
- f) All notices and other communications given or made under this Agreement shall be in English and in writing and shall be given by personal delivery, or by sending the same by prepaid registered mail or courier addressed to the relevant Party at its address, or to the email account set out below (or such other address or email account as intimated by the addressee to the other Parties, with at least 7 (seven) days' prior written notice).

If to the Supplier

Name :
Address :
Telephone No. :
E-Mail :

If to the Authority:

Name :
Address :
Telephone No. :
E-Mail :

Any notice, approval, instruction, demand or other communication so addressed to the relevant Party shall be deemed to have been delivered (i) if given or made by registered mail or courier, 7 (Seven) days after posting; and (ii) if given by personal delivery or email, at the time of delivery.

13. Arbitration

- a) In case of any dispute, including validity of this contract/ interpretation if any on the clauses of the agreement, the matter shall be referred by the Authority/Supplier to an Arbitrator from the panel of Arbitrators approved by SIPCOT within 15 days from the date of receipt of the letter furnishing the panel of Arbitrators from the SIPCOT. If there is no reply from the Supplier within 15 days, the Authority shall choose any of the Arbitrators from the panel of Arbitrators referred to above. The remuneration for the Arbitrator and other expenses shall be shared equally by the Authority and the Supplier.

- b) The venue of the Arbitration shall be at the Head office of State Industries Promotion Corporation of Tamil Nadu Limited, Chennai. The decision of the Arbitrator shall be final and binding on both the parties to the Arbitration.
- c) The Arbitrator may with the mutual consent of the parties, extend the time for making the award. The award to be passed by the Arbitrator is enforceable in the Court at Chennai city only. The arbitration proceedings should be as per the provisions of the Arbitration and Conciliation Act, 1996, as amended by Arbitration and Conciliation (Amendment) Act, 2019.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be signed in their respective names of the day and year first above written.

SIGNED, SEALED and DELIVERED

For and on behalf of

.....:

SIGNED, SEALED AND DELIVERED

For and on behalf of

SIPCOT:

(Signature)

(Name)

(Designation)

(Address)

(Signature)

(Name)

(Designation)

(Address)

In the presence of:

1. Witness 1

2. Witness 2

(Signature)

(Name)

(Designation)

(Address)

(Signature)

(Name)

(Designation)

(Address)

1. Annexure - I Letter of Acceptance

2. Annexure – II Scope of Services

- 2.1. The scope of services includes procurement of the following equipment along with the annual maintenance support for the period of warranty.

Sl. No.	Asset Category	Service Support
1. as per the items, their quantities and specifications detailed in the Annexure – III of the Agreement. required as per the Annexure – III of the Agreement.

- 2.2. The Supplier shall be responsible for installation, testing, commissioning and demonstration of the equipment and conducting onsite trainings as per the requirement specified in Annexure - III based on the request of the Authority/ Technological Partner for the SIICs.
- 2.3. The Supplier shall provide free maintenance including replacement of damaged spares during the warranty period for all the equipment procured under this agreement.

Annexure III - Technical Specifications and Price Schedule (Probable Quantities)

3. Annexure IV – Terms and Conditions of Contract

- 3.1. The Supplier shall provide onsite services support on formal request from the Authority/Technological Partner for SIIC within 3 working days.
- 3.2. All products supplied should be the latest models (at par with cited specification) offered by the vendor in the market and should not have either End of Support (EoS) or End of Life (EoL) issued during the 5 year period from the date of commercial invoice for the procurement.
- 3.3. The Supplier agrees that the cost includes all activities relating to logistics / delivery, installation, commissioning, training and monitoring, Servicing and maintenance etc. Including those of the OEs or ADs as the case may be. Key personnel from the vendor should be roped in for the successful execution of the project to the satisfaction of the Authority.
- 3.4. Materials having ISI/ISO/Engineering (if applicable) certifications shall be provided to the Authority/ Technological Partner wherever applicable.
- 3.5. Request for the supply of any substitute for any items or equipment other than mentioned in the tender, will not be entertained.
- 3.6. The Authority will have right to add/ alter any terms and conditions as per existing financial/ treasury rules and provisions applicable in Tamil Nadu if it has not been included/ addressed in the terms and conditions.
- 3.7. Delivery Terms
 - 3.7.1. The delivery of the respective items as per Annexure-III to SIIC Sriperumbudur and SIIC Hosur has to be made within 30 days from the date of LoA and the Supplier is expected to make necessary logistics arrangements accordingly to the following addresses:
 - 3.7.2. If the Supplier fails to deliver the equipment ordered within the allotted delivery period as specified above, the Supplier may procure goods/ services similar to those un-delivered upon such terms and in such manner as it deems appropriate from any other firm at the risk and cost of the Supplier.
 - 3.7.3. All equipment should be supplied to the designated locations free from breakages. If any is found defective due to transit damage should be replaced.
 - 3.7.4. The equipment shall be accompanied by the Test Report from the Original Equipment Manufacturer (OEM) and the same has to be verified by the Supplier in presence of the Technological Partner and Project Officer concerned of SIPCOT at the delivery site.
 - 3.7.5. The Authority shall not accept any waivers or changes to Annexure-III and the Supplier also abides and assures that that they shall not opt for.
 - 3.7.6. The Supplier shall bear all the storage, transportation and insurance risk till installation at delivery point.
 - 3.7.7. In case of withdrawal from the supply of items by the Supplier, a penalty of up to 30% of the value as per Annexure-III shall be levied by the Authority to the Supplier and the penalty shall also be adjusted in the upcoming payment to the Supplier.

3.8. Liquidity Damages

- 3.8.1. Should any consignment be delayed, liquidated damages at the rate 0.5% of the value of the delayed consignment, for each week or part there of shall be levied and recovered subject to maximum of 5% of total order value.

3.9. Installation and Inspection

- 3.9.1. Inspection of the equipment supplied at the delivery site shall be conducted by the Project Officer of the respective SIPCOT Industrial Parks where the SIPCOT Industrial Innovation Centers (SIICs) are located. The Technological Partner and the Supplier shall be present during the inspection.
- 3.9.2. Transit damages shall be checked for by the Technological Partner of the SIICs, before commencement of installation activities.

3.10. Performance Test

- 3.10.1. The Supplier shall demonstrate the performance of the installed equipment in complete conformity with the relevant technical specifications and performance parameters as specified in Annexure-III to the Technological Partner in the presence of Project Officer concerned of SIPCOT.
- 3.10.2. This demonstration should be done as stipulated by the Authority.

3.11. Payment Terms

- 3.11.1. The payment to the Supplier shall be made separately for each SIIC location.
- 3.11.2. Payment will be released as per the following terms.
 - a. 90% of the value as per Annexure - III shall be paid upon completion of Installation, Demonstration, Testing, Commissioning, Submission of Manuals, Performance Test Reports submission by OEM / Supplier and verification of the same by Technological Partner. The Project Officer concerned of SIPCOT of the respective location shall certify the report submitted by Technological Partner after completion of verification and submit the same to SIPCOT Head Office (HO). The payment shall be made within 30 days from the date of receipt of the verification report by SIPCOT HO.
 - b. 10% of the value as per Annexure - III shall be paid by SIPCOT HO within 30 days from the date of submission of Satisfactory Acceptance Report by the Technological Partner for taking over of the equipment and commencement of operations.
- 3.11.3. No advance is permissible.
- 3.11.4. Payment will not be considered unless the Supplier submits a certificate issued by the OEM stating that the serial numbers of the equipment supplied to the Authority by the Supplier are original.
- 3.11.5. The Authority also reserves the right to recover any dues from the Supplier, which is found on a later date, during audit/excess payment, after final settlement is made to them. The Supplier is liable to pay such dues to the Authority immediately on demand, without raising any dispute/protest.

- 3.11.6. The Authority shall not be responsible for any loss, damages and shortage during transit. Payment shall be made for the ordered material received in good condition only.
- 3.11.7. Payment shall be made by electronic fund transfer offered by the Bank.
- 3.12. Warranty
- 3.12.1. The equipment supplied under the contract shall carry a warranty for at least such period as mentioned in the Annexure-III from the date of submission of Satisfactory Acceptance report by the Technological Partner. The Supplier shall extend free maintenance service during the warranty period.
- 3.12.2. All equipment should be supplied to the designated locations free from breakages, malfunctions and manufacturing defects. If any is/are found defective due to manufacturing defect or design fault or transit damage occurred at the time of supply or within the same should be replaced by the Supplier.
- 3.12.3. If within the period of warranty, the goods are reported by the Authority / Technological Partner to have failed to perform as per the specifications, the Supplier shall either replace or rectify the same free of charge within a maximum of 10 days of notification of such defect received by the Supplier, provided that the goods are used and maintained by the Authority / Technological Partner as per instructions contained in the operating manual. Spares required for warranty repairs shall be provided free of cost by the Supplier.
- 3.13. Annual Maintenance Charges (AMC)
- 3.13.1. The Supplier shall provide AMC services including, but not limited to, replacement, provision of spares & repairs, software licensing and up gradation services, onsite technical support for the AMC duration indicated in Annexure – III from the date of submission of Satisfactory Acceptance report by the Technological Partner.
- 3.14. Training
- 3.14.1. The Supplier shall provide onsite/remote training services as per the requirement indicated in Annexure - III.
- 3.15. Jurisdiction of the Court
- 3.15.1. Any dispute arising out of non-fulfilment of any of the terms and conditions of this Agreement or any other dispute arising out of the arbitration award will be subject to the jurisdiction of the Courts in the City of Chennai only.

4. Annexure V - Power of Attorney

5. Annexure VI – Letter of Authorization from Original Equipment Manufacturer

**6. Annexure VII – Self declaration on the License/Certification for
Equipment**

Appendix 3 : Bank Guarantee for Performance Security

To,
Managing Director,
State Industrial Promotion Corporation of Tamil Nadu,
19-A , Rukmani Lakshimipathy Road,
Egmore, Chennai – 600 008

In consideration of State Industrial Promotion Corporation of Tamil Nadu Limited (SIPCOT) (hereinafter referred as the “Client”, which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators and assigns) having awarded to M/s., having its office at (hereinafter referred as the “Supplier” which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns), vide the Client’s Letter of Acceptance no. dated and the agreement to be executed for Rs. (Rupees), (hereinafter referred to as the “Agreement”) Provision of Technical Infrastructure for and the Supplier having agreed to furnish a Bank Guarantee amounting to Rs. (Rupees) to the Client for performance of the said Agreement.

We, (hereinafter referred to as the “Bank”) at the request of the Supplier do hereby undertake to pay to the Client an amount not exceeding Rs. (Rupees) against any loss or damage caused to or suffered or would be caused to or suffered by the Client by reason of any breach by the said Supplier of any of the terms or conditions contained in the said Agreement.

2. We, (indicate the name of the Bank) do hereby undertake to pay the amounts due and payable under this Guarantee without any demur, merely on a demand from the Client stating that the amount/claimed is due by way of loss or damage caused to or would be caused to or suffered by the Client by reason of breach by the said Supplier of any of the terms or conditions contained in the said Agreement or by reason of the Supplier’s failure to perform the said Agreement. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs. (Rupees).

3. We, (indicate the name of Bank) undertake to pay to the Client any money so demanded notwithstanding any dispute or disputes raised by the Supplier in any suit or proceeding pending before any court or tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this performance bank guarantee shall be a valid discharge of our liability for payment thereunder and the Supplier shall have no claim against us for making such payment.

4. We, (indicate the name of Bank) further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the Client under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till the Client certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said Supplier and accordingly discharges this Guarantee. Unless a demand or claim under this Guarantee is made on us in writing on or before a period of weeks from the date of this Guarantee, we shall be discharged from all liability under this Guarantee thereafter.

5. We, (indicate the name of Bank) further agree with the Client that the Client shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said Supplier from time to time or to postpone for any time or from time to time any of the powers exercisable by the Client against the said Supplier and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Supplier or for any forbearance, act or omission on the part of the Client or any indulgence by the Client to the said Supplier or any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have the effect of so relieving us.

6. This Guarantee will not be discharged due to the change in the constitution of the Bank or the Consultant(s).

7. We, (indicate the name of Bank) lastly undertake not to revoke this Guarantee during its currency except with the previous consent of the Client in writing.

8. For the avoidance of doubt, the Bank's liability under this Guarantee shall be restricted to Rs.***** (Rupees *****) only. The Bank shall be liable to pay the said amount or any part thereof only if the Client serves a written claim on the Bank in accordance with paragraph 2 hereof, on or before [*** (indicate date falling 2 months after the date of this Guarantee)].

For

Name of Bank:

Seal of the Bank:

Dated, the day of, 2022.

(Signature, name and designation of the authorised signatory)

NOTES:

- i. The Bank Guarantee should contain the name, designation and code number of the officer(s) signing the Guarantee.
- ii. The address, telephone no. and other details of the Head Office of the Bank as well as of issuing Branch should be mentioned on the covering letter of issuing Branch.

Annexures

Annexure 1 : Covering Letter

Date: _____

From,
Name:
Address:
Ph:
Fax:
E-mail:

To,
The Managing Director,
State Industries Promotion Corporation of Tamil Nadu Limited,
19-A, Rukmani Lakshmipathy Salai, Egmore,
Chennai - 600 008.

Sir,

Sub : Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Package -- Submission of Tender - Reg.

1. This has reference to your tender notice no.....for provision of technical infrastructure to SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur. We have examined the tender document and thoroughly understood its nature/scope of work and terms & conditions.
2. I/we undertake to offer my/our services in conformity with scope/nature of work and the terms and conditions set out in the tender document. I/We confirm that the tender submitted by me/us is confirming to all the terms and conditions mentioned in the tender document.
3. I/We are enclosing application along with required documents in the prescribed proforma as mentioned in tender document.
4. I/We agree that our tender remain valid for acceptance by SIPCOT for a period of 90 days from the date of opening of the tender.
5. I/We do hereby declare that there is no case with the Police/Court/Regulatory authorities against me/us. Also I/We have not been suspended / delisted / blacklisted by any organization for any reason. I/We also certify that either our firm or any of the partners are not involved in any scam or disciplinary proceedings settled or pending adjudication.
6. I/We certify that all the information furnished by me/us is true to the best of my/our knowledge. I have no objection to SIPCOT verifying any or all the information furnished in this document with the concerned authorities, if necessary.
7. I/We understand that SIPCOT reserves the right to accept or reject any or all the tenders in full or in part without assigning any reason therefore.

Yours faithfully,

(Signature of Bidder with
seal)

Name:

Seal:

Address:

Phone No :

Annexure 2 : Details of the Bidder

1.	Tender Title : Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur Package	
2.	Name of Company or Firm:	
3.	Legal status (e.g. incorporated private company, unincorporated business, partnership etc.) :	
4.	PAN Number :(<i>Enclose a Copy of PAN card</i>)
5.	GST Number : (<i>Enclose a Copy of GST Certificate</i>)
6.	Country of incorporation :	
7.	Registered address:	
8.	Year of Incorporation:(<i>Enclose a Copy of Incorporation Certificate/Partnership Deed, whichever is applicable</i>)
9.	Year of commencement of business:	
10.	Principal place of business:	
11.	Brief description of the Company including details of its main lines of business	
12.	Name, designation, address and phone numbers of authorised signatory of the Applicant:	
13.	Name:	
14.	Designation:	
15.	Company:	
16.	Address:	
17.	Phone No.:	

Signature of the Bidder :

Date :

Name in Block letter :

Annexure 3 : Annual Turnover

The Annual turnover of M/s for the past three years are given below and certified that the statement is true and correct.

S.No.	Year	Turnover (Rs. in lakh)
1.	2016-2017	
2.	2017-2018	
3.	2018-2019	
4.	2019-2020	
	Total	
Average annual turnover		

Note: Average Turnover of any three consecutive audited financial years will be considered i.e. FY 2016-17, 2017-18 and 2018-19 (or) FY 2017-18, 2018-19 and 2019-20.

DATE :

SIGNATURE OF THE BIDDER

SIGNATURE OF CHARTERED ACCOUNTANT (with seal and Address)

**Annexure 4 : Letter of Authorization from Original Equipment
Manufacturer**

To,

The Managing Director,
State Industries Promotion Corporation of Tamil Nadu Limited (SIPCOT),
19-A, Rukmani Lakshmipathy Road,
Egmore, Chennai - 600 008

Sir,

We hereby authorize M/sto undertake to submit a Bid, and subsequently negotiate and sign the contract with the SIPCOT against Tender No:_____ for the (type the Description of goods) developed by us. We hereby extend our full warranty for the goods offered for supply by the above company against this tender.

We also undertake to provide timely supplies as per terms of tender and as agreed mutually and also to provide a trouble free and continuous support either directly or through our authorized partners under our supervision during the said support period. We will provide the necessary support in the event of up gradation of any of the software is necessitated while providing the support and will arrange for complete replacement of the item(s) with an equivalent / higher version.

For this tender we authorize M/s. _____ (Complete address and full contact details of the partner) to be our sales and service partner. In the event of discontinuation of supply and service by our partner or any problem arises during provision of supply and services, the entire responsibility to provide trouble free and continuous supply and services to the end user rests with us and we undertake to provide supply and services directly or through our alternative sales / service partners.

In case of violation of any of the conditions above, I/We understand that I/ We are liable to be blacklisted by SIPCOT for a period of three years.

(Signature for and on behalf of Principal)

Note: Competent Authority of the Manufacturer should issue the Letter of Authorization on the letter head signed by Managing Director/Company Secretary/Proprietor/Partners for each Bidder/Dealer Separately.

Annexure 5 : Certificate

Date: _____

Certified that M/s...../ the firm /company or its partners / shareholders had not been blacklisted by State Industries Promotion Corporation of Tamil Nadu Limited (SIPCOT), or by any Government Agencies.

SIGNATURE OF THE BIDDER
(with seal and address)

Annexure 6 : Declaration Form

Date: _____

a) I/We having our office at do declare that I/We have carefully read all the conditions of tender sent to me/us by State Industries Promotion Corporation of Tamil Nadu Limited (SIPCOT), for the tenders floated vide tender ref.no._____ for provision of technical infrastructure at the SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur - Package as per the tender conditions.

b) I/We have downloaded the tender document from [/www.tenders.tn.gov.in](http://www.tenders.tn.gov.in) and I /We have not tampered / modified the tender document in any manner. In case, if the same is found to be tampered / modified, I/ We understand that my/our tender will be summarily rejected and full Earnest Money Deposit will be forfeited and I /We am/are liable to be banned from doing business with SIPCOT or prosecuted.

SIGNATURE OF THE BIDDER
(with seal and address)

Annexure 7 : License/Certification for Equipment

We hereby declare the following are the major License/ Certifications for the products & services to be offered by **M/S <<name of the company>>** specified in the Tender document.

Sl No	Product Name	Product Code	Certification Details

I/We do declare on behalf of M/S <<name of the company>> that all the products, training, AMC and other value added services mentioned in the bid document shall meet the required industry standards and in case of any discrepancy found in the above stated Licenses/Certification SIPCOT reserves the right to take the necessary action against our company.

SIGNATURE OF THE BIDDER
(with seal and address)

Annexure 8 : BOQ and Technical Specification Compliance

Self Declaration of BOQ and Technical Specification Compliance

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Compliance
				QTY	SKU	Yes/No
A		Sensors				
	1	Proximity inductive sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 10 - 30 V • Size : M30 • Sensing distance : 20 mm • Switch output : PNP • Switching element function : Normally open contact • Electrical connection : 3-core Cable with min. 2 M length 	10	Nos.	
	2	Proximity inductive sensor	<ul style="list-style-type: none"> • Operating voltage range DC: 10 - 30 V • Size : M18 • Sensing distance : 8 mm • Switch output : PNP • Switching element function : Normally open contact • Electrical connection : 3-core Cable with min. 2 M length 	10	Nos.	
	3	Position transmitter	<ul style="list-style-type: none"> • Operating voltage range DC: 15 - 30 V • Sensing distance : 0 - 160 mm • Analogue output : 4 - 20 mA • Travel resolution : 0.05 mm • With T slot design • With IO Link protocol • Electrical connection: 3-core Cable with min. 0.2 M length 	4	Nos.	
	4	Position sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 15 - 30 V • Should be compatible with gripper • Electrical connection: Cable with 4 pin and min. 0.5 M length 	6	Nos.	
	5	Proximity magnetic sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 5 - 30 V • Switch output : PNP • Switching element function : Normally open contact • With T slot design • Electrical connection: 3-core Cable with min. 4-5 M length 	8	Nos.	

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6	Proximity magnetic sensor	<ul style="list-style-type: none"> • Operating voltage range AC/DC : 5 - 30 V • Switch output : PNP • Switching element function : Normally open contact • With T slot design, reed type • Electrical connection: 3-core Cable with min. 2 M length 	8	Nos.	
7	Pressure Sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 15 - 30 V • Operating pressure :0-10 bar • Switch output : PNP-2Nos (or) NPS-2Nos • Switching element function : Normally open/Normally closed contact • With LCD display 	16	Nos.	
8	Pressure Sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 15 - 30 V • Operating pressure : -1 to 1 bar • Switch output : PNP-2Nos (or) NPS-2Nos • Switching element function : Normally open/Normally closed contact • With LCD display 	10	Nos.	
9	Flow Sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 15 - 30 V • Analogue output :0-10 V • Operating pressure : 0-10 bar • Flow rate: Min. 1000 LPM • Switch output : PNP-2Nos (or) NPS-2Nos • Switching element function : Normally open/Normally closed contact • With LCD display 	4	Nos.	
10	Force Sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 15 - 30 V • Force measuring range : 0 - 12 kN • Limit load : 30 kN • Analogue output : 10-30 V , 4 - 20 mA 	4	Nos.	
11	Retro Reflective Sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 10 - 30 V • At work range : 0 - 1000 mm • Material electrical contact: Brass, gold plated • Max. current output : 50 mA • Light colour & type : Red LED 	6	Nos.	
12	Reflector	<ul style="list-style-type: none"> • Mounting: screw fixing • Material housing: suitable material 	6	Nos.	
13	Gap sensor to detect contactless distance	<ul style="list-style-type: none"> • Operating voltage range DC : 15 - 30 V • Supply pressure : 0.8 to 1.6 bar • Sensing range : 20 - 200 μm • Max. current output : 100 mA • Switch output : PNP (light switching), NPN (dark switching) 	6	Nos.	

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14	Distance Sensor	<ul style="list-style-type: none"> • Operating voltage range DC: 15 - 30 V • Distance measuring range: 40 - 100 mm • Max. current output: 100 mA • Switch output: PNP (light switching), NPN (dark switching) • Light colour & type: Red & LED • With IO Link protocol 	6	Nos.	
15	Colour Sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 10 - 30 V • Distance measuring range : 12 - 30 mm • Max. current output : 100 mA • Switch output : PNP 	4	Nos.	
16	Signal converter	<ul style="list-style-type: none"> • Operating voltage range DC: 15 - 30 V • Signal range: 0 - 10 V • Max. current output: 100 mA • Switch output: PNP-2Nos (or) NPS-2Nos • Switching element function: Normally open/Normally closed contact • With IO Link protocol 	6	Nos.	
17	Pressure sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 15 - 30 V • Operating pressure : 0-10 bar • Switch output : PNP-2Nos (or) NPS-2Nos • Analogue output : 0-10 V, 4-20 mA • Switching element function: Normally open/Normally closed contact • With LCD display • With IO Link protocol 	10	Nos.	
18	Pressure Sensor	<ul style="list-style-type: none"> • Operating voltage range DC: 15 - 30 V • Operating pressure: -1 to +1 bar • Switch output: PNP-2Nos (or) NPS-2Nos • Analogue output: 0-10 V, 4-20 mA • Switching element function: Normally open/Normally closed contact • With LCD display • With IO Link protocol 	10	Nos.	
19	Flow sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 18 - 30 V • Analogue output : 0-10 V, 4-20 mA • Operating pressure : 0-12 bar • Flow rate : Min. 100 LPM • Switch output : PNP-2Nos (or) NPS-2Nos • Switching element function : Normally open/Normally closed contact • With LCD display • With IO Link protocol 	6	Nos.	

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	20	Distance sensor	<ul style="list-style-type: none"> • Operating voltage range DC: 10 - 30 V • Distance measuring range: 40 ... 100 mm • Max. current output: 100 mA • Switch output: PNP (light switching), NPN (dark switching) • Light colour & type: Red & Laser • With IO Link protocol 	6	Nos.	
B		Sensor Accessories				
	21	Connecting cable with rectangle plug	<ul style="list-style-type: none"> • Rectangle design with 4 pin at one end and other end bare cables • Operating voltage range DC : 0 - 30 V • Length of the cable : Min. 3-4 m 	20	Nos.	
	22	Mounting bracket for sensors	<ul style="list-style-type: none"> • Material : Noncorrosive alloy steel • Type : L bracket with through hole 	10	Nos.	
	23	Connecting cable with M12 plug	<ul style="list-style-type: none"> • M12 plug at one end and other end bare cables • Operating voltage range AC/DC : 0 - 60 V • Length of the cable : Min. 10 m 	6	Nos.	
	24	Connecting cable with M12 plug	<ul style="list-style-type: none"> • M12 plug at one end and other end bare cables • Operating voltage range AC/DC : 0 - 250 V • Length of the cable : Min. 5 m 	6	Nos.	
C		Grippers				
	25	Gripper with 3 fingers	<ul style="list-style-type: none"> • Number of gripper fingers : 3 • Position detection : Hall effect sensor • Mode of Operation : Double acting • Operating pressure : 2 - 8 bar • Operating medium : Pneumatic 	2	Nos.	
	26	Gripper with Bellows	<ul style="list-style-type: none"> • Type: Bellow gripper • Stroke per gripper jaw : 15.5 mm • Position detection : Proximity sensor • Mode of Operation : Single acting closed • Operating pressure : 4 - 8 bar • Operating medium : Pneumatic 	4	Nos.	
	27	Suction cup	<ul style="list-style-type: none"> • Cup diameter: Min. 50 mm • Suction cup shape: Round flat • Suction cup material: NBR • Operating pressure: -0.7 bar • Operating medium: Pneumatic 	4	Nos.	

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	28	Suction cup	<ul style="list-style-type: none"> • Cup diameter : Min. 50 mm • Suction cup shape : Round extra deep • Suction cup material : NBR • Operating pressure : -0.7 bar • Operating medium : Pneumatic 	4	Nos.	
	29	Suction cup	<ul style="list-style-type: none"> • Cup diameter: Min. 50 mm • Suction cup shape: Round bellow • Suction cup material: NBR • Operating pressure: -0.7 bar • Operating medium: Pneumatic 	4	Nos.	
	30	Holder for Suction cups	<ul style="list-style-type: none"> • Assembly position : Vertical • Design structure : Vacuum connection at side • Operating medium : Pneumatic • Mounting type : With Internal thread 	4	Nos.	
	31	Adaptive gripper with accessories	<ul style="list-style-type: none"> • Size : 20 • Stroke : 66 mm • Load Capacity : 1 Kg 	2	Nos.	
	32	Vacuum generator	<ul style="list-style-type: none"> • Valve function : 2/2 solenoid with manual override • Operating Pressure : 2 - 8 bar • Max. suction rate with respect to atmosphere: 16 l/min 	4	Nos.	
D		Pneumatic Drives				
	33	Double acting cylinder	<ul style="list-style-type: none"> • Piston diameter : 32 mm • Stroke : 150 mm • Piston rod thread : M10 • Cushioning : Pneumatic cushioning adjustable at both ends • Operating pressure : 0.6 – 12 bar 	2	Nos.	
	34	Double acting cylinder, Round	<ul style="list-style-type: none"> • Piston diameter : 10 mm • Stroke : 50 mm • Piston rod thread : M4 • Cushioning: Flexible cushioning rings at both ends • Operating pressure : 1.5 – 10 bar 	2	Nos.	
	35	Double acting cylinder, Round	<ul style="list-style-type: none"> • Piston diameter: 12 mm • Stroke: 100 mm • Piston rod thread: M4 • Cushioning: Flexible cushioning rings at both ends • Operating pressure: 1.5 – 10 bar 	2	Nos.	
	36	Double acting cylinder	<ul style="list-style-type: none"> • Piston diameter : 32 mm • Stroke : 80 mm • Piston rod thread : M10 • Cushioning : Flexible cushioning rings at both ends 	2	Nos.	

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			<ul style="list-style-type: none"> • Operating pressure : 0.6 – 10 bar 			
	37	Single acting cylinder	<ul style="list-style-type: none"> • Piston diameter: 10 mm • Stroke: 50 mm • Piston rod thread: M4 • Cushioning: Flexible cushioning rings at both ends • Operating pressure: 1.5 – 10 bar 	20	Nos.	
	38	Single acting expanding cylinder	<ul style="list-style-type: none"> • Size : 5 mm • Nominal length : 100 mm • Operating pressure : 0 – 6 bar Material membrane : AR Material nut : Steel	14	Nos.	
	39	semi-rotary actuator	<ul style="list-style-type: none"> • Size: 32 mm • Design: Vane • Mode of operation: double acting • Operating pressure: 2 – 8 bar • Swivel angle: 0 ... 270 deg • Position detection: For proximity sensor • Pneumatic connection : G 1/8 	2	Nos.	
	40	semi-rotary actuator	<ul style="list-style-type: none"> • Size: 25 mm • Design : Vane • Mode of operation : double acting • Operating pressure : 2 – 8 bar • Swivel angle : 0 - 270 deg • Position detection : For proximity sensor 	2	Nos.	
E		Valves				
	41	One way Flow control Valve	<ul style="list-style-type: none"> • Valve function : One-way flow control function for exhaust air • Nominal flow rate : Min. 185 LPM • Pneumatic connection for port 1: For tubing outside diameter 6 mm • Pneumatic connection for port 2: 1/8" • Adjustment : Knurled screw • Operating pressure: 0.2 – 10 bar 	10	Nos.	

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	42	One way Flow control Valve	<ul style="list-style-type: none"> • Valve function: One-way flow control function for exhaust air • Nominal flow rate: Min. 100 LPM • Pneumatic connection for port 1: For tubing outside diameter 4 mm • Pneumatic connection for port 2: M5 • Adjustment: Knurled screw • Operating pressure: 0.2 – 10 bar 	8	Nos.	
	43	3/2 - way Solenoid Valve	<ul style="list-style-type: none"> • Size : 25 • Valve function : 3/2 closed, monostable • Type of actuation : Electrical • Nominal flow rate : 1000 l/min • Operating pressure : 2 - 8 bar • Design structure : Piston slide • Type of reset : Spring • Manual override : Detenting pushing • Pilot air supply : Piloted • Operating medium : Pneumatic • Pneumatic connection: G 1/4 • Operating Voltage: 24V DC 	4	Nos.	
	44	3/2 - way solenoid valve	<ul style="list-style-type: none"> • Size: 25 • Valve function : 3/2 closed, monostable • Type of actuation : Electrical • Nominal flow rate : 1000 l/min • Operating pressure : 2 - 8 bar • Design structure : Piston slide • Type of reset : Spring • Operating medium : Pneumatic • Pneumatic connection: For tubing outside diameter 6 mm • Operating Voltage: 12V DC 	10	Nos.	
	45	5/2 Solenoid Valve	<ul style="list-style-type: none"> • Size: 10 • Valve function: 5/2 closed, bistable • Type of actuation: Electrical • Nominal flow rate: 195 l/min • Operating pressure: 1.5 - 7 bar • Design structure: Piston slide • Operating medium: Pneumatic • Pneumatic connection: M5 • Operating Voltage: 24V DC 	6	Nos.	
	46	5/2 Solenoid Valve	<ul style="list-style-type: none"> • Size: 20 • Valve function : 5/2 closed, bistable • Type of actuation : Electrical • Nominal flow rate : 550 l/min • Operating pressure : 1.5 - 8 bar • Design structure : Piston slide • Operating medium : Pneumatic • Pneumatic connection : 1/8" • Operating Voltage : 24V DC 	6	Nos.	

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	47	5/2 Solenoid Valve	<ul style="list-style-type: none"> • Size: 10 • Valve function : 5/2 closed, bistable • Type of actuation : Electrical • Nominal flow rate : 195 l/min • Operating pressure : 1.5 - 7 bar • Design structure : Piston slide • Operating medium : Pneumatic • Pneumatic connection : M5 • Electrical connection : horizontal, 2 pin • Operating Voltage : 24V DC 	4	Nos.	
	48	one-way flow control valve	<ul style="list-style-type: none"> • Valve function: One-way flow control • Nominal flow rate: Min. 110 LPM • Pneumatic connection: For tubing outside diameter 4 mm • Adjustment: Knurled screw • Operating pressure: 0.2 – 10 bar 	10	Nos.	
F		Manifold Assembly				
	49	Valve manifold with 5/2 solenoid valve	<ul style="list-style-type: none"> • Size: 10 • Valve function : 5/2 double solenoid – 5 Nos. • Operating Pressure : -0.9 - 10 bar • Valve type : Subbase valve • Exhaust port : Silencer • Operating voltage : 24 V DC 	2	Nos.	
	50	Valve manifold with 5/3 solenoid valve	<ul style="list-style-type: none"> • Size: 10 • Valve function : 5/3 double solenoid, mid position exhausted – 5 Nos. • Operating Pressure : -0.9 - 10 bar • Valve type : Subbase valve • Exhaust port : Silencer • Operating voltage : 24 V DC 	2	Nos.	
	51	Valve manifold with 3/2 solenoid valve	<ul style="list-style-type: none"> • Size: 10 • Valve function: 3/2, NC solenoid– 3 Nos. • Operating Pressure: -0.9 - 10 bar • Valve type: Subbase valve • Exhaust port: Silencer • Operating voltage: 24 V DC 	2	Nos.	
G		Pneumatic Accessories				
	52	Plug socket with cable for solenoids	<ul style="list-style-type: none"> • Electrical connection : Plug socket • Cable length : min. 2 m • Cable dia : Min. 6 mm • Operating voltage : 24 V DC • Switching position indicator: LED 	10	Nos.	

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	53	Plug socket with cable for solenoids	<ul style="list-style-type: none"> • Electrical connection : Plug socket • Cable length : min. 2 m • Cable dia : Min. 5 mm • Operating voltage : 24 V DC • Switching position indicator: LED 	26	Nos.	
	54	Connecting cable for proximity sensors	<ul style="list-style-type: none"> • Operating voltage range AC/DC: 0 - 60 V • M8 plug at one end and other end bare cables • Length of the cable: Min. 5 m 	8	Nos.	
	55	Plug socket with cable for solenoids	<ul style="list-style-type: none"> • Electrical connection: Plug socket, 3 socket, 2 wires • Cable length: min. 2 m • Operating voltage: 24 V DC 	26	Nos.	
	56	Connecting cable for proximity sensors	<ul style="list-style-type: none"> • Operating voltage range AC/DC: 0 - 60 V • 4pin rectangular plug at one end and other end bare cables • Length of the cable: Min. 2 m 	10	Nos.	
	57	Pneumatic connector	<ul style="list-style-type: none"> • Type: Straight • Pneumatic connection port-1:1/4" male thread • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: -0.95 - 14 bar 	20	Nos.	
	58	Pneumatic connector	<ul style="list-style-type: none"> • Type: Straight connection • Pneumatic connection port 1:M5 male thread • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	8	Nos.	
	59	Pneumatic connector	<ul style="list-style-type: none"> • Type: Straight connection • Pneumatic connection port 1:M5 male thread • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	30	Nos.	
	60	Pneumatic connector	<ul style="list-style-type: none"> • Type: Straight connection • Pneumatic connection port-1:1/8" male thread • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating 	40	Nos.	

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			pressure: -0.95 to 14 bar			
	61	Pneumatic connector	<ul style="list-style-type: none"> • Type: L connection • Pneumatic connection port 1:M3 male thread • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: -0.95 ... 14 bar 	12	Nos.	
	62	Pneumatic connector	<ul style="list-style-type: none"> • Type: L connection • Pneumatic connection port 1:1/8" female thread • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	
	63	Pneumatic connector	<ul style="list-style-type: none"> • Type: X connection • Pneumatic connection port 1: For tubing outside diameter 4 mm • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	
	64	Pneumatic connector	<ul style="list-style-type: none"> • Type: X connection • Pneumatic connection port 1: For tubing outside diameter 6 mm • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	
	65	Pneumatic connector	<ul style="list-style-type: none"> • Type: X connection • Pneumatic connection port 1: For tubing outside diameter 8 mm • Pneumatic connection port 2: For tubing outside diameter 8 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	
	66	Pneumatic connector	<ul style="list-style-type: none"> • Type: Push/pull sleeve • Pneumatic connection port 1: Push in sleeve for 8 mm • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	

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67	Pneumatic connector	<ul style="list-style-type: none"> • Type: Bulkhead • Pneumatic connection port 1: For tubing outside diameter 4 mm • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	
68	Pneumatic connector	<ul style="list-style-type: none"> • Type: Bulkhead • Pneumatic connection port 1: For tubing outside diameter 6 mm • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	
69	Pneumatic connector	<ul style="list-style-type: none"> • Type: Bulkhead • Pneumatic connection port 1: For tubing outside diameter 8 mm • Pneumatic connection port 2: For tubing outside diameter 8 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	
70	Pneumatic connector	<ul style="list-style-type: none"> • Type: T connection • Pneumatic connection port 1: For tubing outside diameter 4 mm • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	
71	Pneumatic connector	<ul style="list-style-type: none"> • Type: T connection • Pneumatic connection port 1: For tubing outside diameter 6 mm • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	
72	Pneumatic connector	<ul style="list-style-type: none"> • Type: T connection • Pneumatic connection port 1: For tubing outside diameter 8 mm • Pneumatic connection port 2: For tubing outside diameter 8 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	
73	Pneumatic connector	<ul style="list-style-type: none"> • Type: Y connection • Pneumatic connection port 1: For tubing outside diameter 4 mm • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	

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74	Pneumatic connector	<ul style="list-style-type: none"> • Type: Y connection • Pneumatic connection port 1: For tubing outside diameter 6 mm • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	
75	Pneumatic connector	<ul style="list-style-type: none"> • Type: Y connection • Pneumatic connection port 1: For tubing outside diameter 8 mm • Pneumatic connection port 2: For tubing outside diameter 8 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	
76	Plastic tubing	<ul style="list-style-type: none"> • Outside diameter : 4 mm • Inside diameter : 2.6 mm • Temperature dependent operating pressure : -0.95 to 10 bar • Colour : Translucent blue 	20	Nos.	
77	Plastic tubing	<ul style="list-style-type: none"> • Outside diameter: 6 mm • Inside diameter: 4 mm • Temperature dependent operating pressure: -0.95 to 10 bar • Colour: Translucent blue 	20	Nos.	
78	Plastic tubing	<ul style="list-style-type: none"> • Outside diameter: 8 mm • Inside diameter: 5.7 mm • Temperature dependent operating pressure: -0.95 to 10 bar • Colour: Translucent blue 	10	Nos.	
79	Silencer	<ul style="list-style-type: none"> • Material of silencer insert: Bronze • Pneumatic connection: M5 male thread • Sound pressure level: 72 dB(A) 	20	Nos.	
80	Silencer	<ul style="list-style-type: none"> • Material of silencer insert: Bronze • Pneumatic connection: 1/8" male thread • Sound pressure level: 76 dB(A) 	12	Nos.	
81	Blanking plug	<ul style="list-style-type: none"> • Pneumatic connection, port 1: M5 male thread • Mounting type: Internal hex • With sealing washer 	10	Nos.	
82	On/Off valve	<ul style="list-style-type: none"> • Operating pressure: 0 to 16 bar • Type of actuation: manual • Valve function: 3/2 bistable 	8	Nos.	
83	Shut Off valve	<ul style="list-style-type: none"> • Operating pressure: -0.95 to 10 bar • Type of actuation: manual • Valve function: 2/2 bistable • Nominal flow rate: Min. 270 LPM • Pneumatic connection: For tubing 	8	Nos.	

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			outside diameter 6 mm			
	84	FRL unit	<ul style="list-style-type: none"> • Pneumatic connection: M5 female thread • Standard nominal flow rate: 80 l/min • Pressure regulation range: 0.5 to 7 bar • Grade of filtration: 5 µm 	4	Nos.	
	85	FRL unit	<ul style="list-style-type: none"> • Pneumatic connection: 1/8" female thread • Standard nominal flow rate: 700 l/min • Pressure regulation range: 0.5 to 12 bar • Grade of filtration: 40 µm 	4	Nos.	
	86	Mounting bracket	Foot mounting bracket set for double acting cylinder	4	Nos.	
	87	Mounting bracket for Proximity sensor	<ul style="list-style-type: none"> • Size: 10 	8	Nos.	
H		Controllers				
	88	PLC	<ul style="list-style-type: none"> • Digital input : Min. 16 Nos. • Digital output : Min. 8 Nos. • IO link master : 4 ports • Connectivity : Ethercat 	2	Nos.	
	89	HMI Unit	<ul style="list-style-type: none"> • 4" operator unit, wide touchscreen • PLC interface: Ethernet/RS485 	2	Nos.	
I		Air Preparation Unit				
	90	FRL unit with on/off valve	<ul style="list-style-type: none"> • Actuator lock: Rotary knob with lock • Condensate drain: Manual rotary • Design structure: Filter regulator with pressure gauge proportional standard oil mist lubricator • Grade of filtration: 40 µm • Operating pressure: 1 - 15 bar • Nominal flow rate: 1500 l/min • Operating Medium: Pneumatic • Pneumatic connection: 1/2" female thread 	2	Nos.	
J		Training Kit				

91	Mobile workstation for pneumatics with two drawer unit	<p>Mobile workstation should contain:</p> <ul style="list-style-type: none"> + Double sided versatile Aluminium or steel structure based frame with grooves to mount components easily that will be used by the user to perform his work. + Double sided Single row rack to hold pneumatic, electronics components. + Two drawer units inside the workstation each should have at least four drawer units to keep working components. + All supporting accessories should be included. + Expected size of 50*35*35 inches. 	2	Nos.	
92	Basic Pneumatic Kit	<p>The Pneumatic Training Kit should contain</p> <ul style="list-style-type: none"> • 2x Double acting cylinder with 20 mm piston diameter and 100 mm stroke length • 1x Single acting cylinder with 20 mm piston diameter and 50 mm stroke length • 1x 5/2-way pneumatic valve with single side actuation, return spring and Poppet seat design • 3x 5/2-way pneumatic actuated valve with double side actuation, Poppet set design • 3x 3/2-way valve with push button actuation (Black), single side actuation return spring, normally closed and poppet valve design. • 1x 3/2-way valve with push button actuation (Yellow), single side actuation return spring, normally opened and poppet valve design. • 1x 5/2-way valve with selector switch actuation (Black), single side actuation returns spring and poppet valve design • 1x 3/2-way valve with roller lever actuation, idle return, single side actuation return spring, normally closed and poppet valve design • 3x 3/2-way with roller lever actuation, single side actuation return spring, normally closed and poppet valve design • 2x Pressure Gauge with display range 0-16 bar • 1x Quick Exhaust Valve • 1x Shuttle valve (OR) • 1x Dual pressure valve (AND) • 1x Time delay valve N.C. 	2	Nos.	

			<ul style="list-style-type: none"> • 2x One-way flow control valve • 1x Pressure sequence valve • 1x Filter regulator with pressure gauge and On/Off valve • 1x Pressure regulator with gauge • 1x Manifold with 6 self-closing non-return valves • 1x Plastic tubing, 4 mm blue color, 20 M • 1x Plastic tubing, 8 mm blue color, 5 M • 10x T-Connector, 4 mm 			
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	93	Basic Electro Pneumatic training kit	<p>The Electro Pneumatic Training Kit must contain</p> <ul style="list-style-type: none"> • 1x 3/2-way solenoid valve with return spring, piston spool design, manual override, and LED, NC • 1x 5/2-way single solenoid valve with return spring, piston spool design, manual override, and LED • 1x 5/2-way double solenoid valve, piston spool design, manual override, and LED • 1x Relay unit with three relays, 4 changeover switches, connection via 4 mm safety sockets • 1x Signalling unit with an illuminated pressure switch, three illuminated push button, each with a mini bulb, connection via 4 mm safety sockets • 2x Proximity sensor with light emitting diode and integrated protective circuit, reed contact, output through 4mm safety plug • 2x Cylinder mounting kit for sensor with screw • 1x PE converter, it should be operated as three functions like pressure switch, vacuum switch and differential pressure switch. • 2x Electrical limit switch (1 left act. + 1 right act.) with micro switch, roller operated. It should be used as a N/O contact, N/C contact or a changeover switch • 1x 24 V DC Power supply unit, input voltage is 85 – 265 V AC, Output voltage is 24 V DC via 4 mm safety sockets • 1x Connection cables should be in red and blue colours, each with 4 mm plugs covered/Insulated for safety purpose in different lengths 	2	Nos.	
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	94	Automation technology learning system	The complete package consists of three stations; stacking magazine station, conveyor station and handling station, a compressor, three interface modules to connect the PC to the station, three CDs with simulation and controller software and manual and practising documents and comprehensive accessories + 1 stacking magazine station + 1 conveyor station + 1 handling station + 1 compressor + 3 x control packages with interface for PC/station and a mains cable	2	Set	
	95	Bio-inspired robotic Kit	Bio-inspired robotic Kit contains the material to build three different robots + Bio-inspired fish + Bio-inspired elephant + Bio-inspired chameleon Components of the kit should be: + Transparent body (approx. length: 200 mm, diameter 75 mm) + 3 - digital servos with min. 30 Ncm torque, + 1 - waterproof servo with min. 30 Ncm torque + Microcontroller with 32 bit Arduino compatible CPU and WLAN access point + Necessary shield for microcontroller + 13 - high precision injection molded construction parts, including 3 fin rays (1 large, 2 small) + High Quality Cardboard box with foam insert for easy and safe storage of the components + Control with every smartphone, tablet with WLAN and Web Browser + Access to complete online learning environment, including tutorials, background about bionics, videos, learning paths with different time frames, download area with worksheets, CAD files, circuits and programs	16	Set	
	96	Microcontoller for bio inspired robot	Microcontroller with 32 bit Arduino compatible CPU and WLAN access point	10	Nos.	
K		Softwares				

	97	Pneumatic simulation software	<p>Number of users : 3</p> <p>The simulation tool pneumatics should include a circuit creation tool, a high-performance simulation tool and a comprehensive e-learning tutorial. This software package should be provide keeping in mind that this should be a handy tool for the trainers in Educational Training Institutes & corporate training centres to go hand in hand with the latest in the industry.</p> <p>With this software,</p> <ul style="list-style-type: none"> + The software should be possible to simulate circuits of pneumatics, electro pneumatics, servo pneumatics, vacuum technology, sensor technology, safety and digital technologies. + Functional features of products & components can be understood + The virtual cut sectional animation lets the students to know the internal details of the product & to understand the functions simultaneously + Trainers can explain about the products and can educate the students at a very short period, so as to have ample time on using trainer kits to gain more practical knowledge + Even a non-technical person can easily understand the concepts of pneumatic products 	2	Nos.	
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	98	Software for creating virtual Learning Environments	<p>Number of Users: 1</p> <p>The software should be industrially tested, extremely powerful platform for 3D modelling, 3D simulation models for automation technology.</p> <p>The software must have different mechatronics modules, Process control modules, Mobile robot, Robotic module virtually. The software should control and simulate more than 100 type of simple to complex models like mechatronics, robotics, process etc., (virtually).</p> <p>The software should cover main areas in:</p> <ul style="list-style-type: none"> + Robot programming + PLC programming + Troubleshooting + Production planning and production control <p>It should combine the following functions in one common interface.</p> <ul style="list-style-type: none"> + 3D real-time simulation + System and production line design based on model libraries + The program offers an integrated training program and a variety of different robot models. + All the required basics for automation with robots should be possible by in built applications. + Numerous graphics and animations to explain technical terms and facts, videos on a large number of industrial applications involving robots. + Sample programs for every model, technical documentation including instructions on processing. + Communication via OPC client/server + Simulation of the mobile robot platform + Virtual human with 30 independent degrees of freedom + The complex model library contains 3D process models of selected mechatronic stations, various belt and warehouse systems. + In manual mode, individual step movements should be made 	2	Nos.	
L		Accessories				

	99	Valve terminal with Control app - 1	<p>Operating pressure: 3 - 8 bar</p> <ul style="list-style-type: none"> • Valve function: can be allocated using the motion app • Piezo technology valves with configurable functionality which should operated via software must control the following parameters like pressure, flow, vacuum and position <p>By using the system, student should able to learn how to control following:</p> <ul style="list-style-type: none"> • Controlling Pneumatic Cylinder speed with the help of Mobile apps. • Controlling Pneumatic cylinder position in closed loop with the help of Mobile apps. • Controlling Pneumatic Gripping force with the help of Mobile apps. • Controlling Vacuum Force by Varying input pressure from Valve terminal. • End Position Cushioning with help of external sensor and DCV valve terminals (Soft Stop and Soft Start) • Valve configuration and its functionality excessed via software on any one valve (i.e. configuring valve as 3/2, 4/2 or 4/3 via software) • PLC with Min. 8 DI/DO 	2	Set	
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	100	Valve terminal with Control app - 2	<p>The setup should have Piezo technology valves with configurable functionality which should operated via software must control the following parameters like pressure, flow, vacuum and position – 1 No.</p> <ul style="list-style-type: none"> • Double acting cylinder with 32 mm piston dia, min. 100 stroke length Pneumatic cushioning adjustable at both ends with pneumatic connector – 1 No. • Double acting cylinder with 32 mm piston dia, min. 100 stroke length Flexible cushioning rings/plates at both ends, with pneumatic connector – 1 No. • vacuum generator with ejector pulse, Max. suction rate with respect to atmosphere: 48.8 l/min -1 No. • air reservoir, 750 ml, alloy steel, non-corrosive metal tank – 1 No. • Pressure sensor, Analogue output 0-10 V, 4-20 mA, IO link feature – 1 No. • Precision pressure regulator with ¼” female thread -1 No. • Accessories – 1 No. • Small box to store all items – 1 No. <p>By using the system, student should able to learn how to control following:</p> <ul style="list-style-type: none"> • Controlling Pneumatic Cylinder speed with the help of Mobile apps. • Controlling Pneumatic cylinder position in closed loop with the help of Mobile apps. • Controlling Pneumatic Gripping force with the help of Mobile apps. • Controlling Vacuum Force by Varying input pressure from Valve terminal. • End Position Cushioning with help of external sensor and DCV valve terminals (Soft Stop and Soft Start) • Valve configuration and its functionality excessed via software on any one valve (i.e. configuring valve as 3/2, 4/2 or 4/3 via software) 	2	Set	
M		Training / Consultancy				
	101	<p>1. Comprehensive onsite/remote training services covering all hardware/software modules listed above offered within 30 days from the delivery of items, covering a min. of 30 users/trainees.</p> <p>2. Additional annual refresher/upgrade training for a min.</p>		1	Nos.	

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		of 10 days offered onsite/remote for upto 1 year from the date of first training session. 3. Consultancy for Product development 3 days every year for 5years			
N		Warranty			
	102	1. Minimum 1 year warranty for all hardware/software items including onsite technical support & service, replacement, spares & repairs.	1	Nos.	

We hereby declare that all the machineries/equipment/components and software stated in our Bid will satisfy the following technical qualifying criteria without any deviation.

Coverage of BoQ 100% with cited quantity and specifications

- a. All the itemized BoQ stated in the tender are covered (100% BoQ line item coverage)
- b. The stated quantity of the BoQ items mentioned in the tender shall be provided without any changes.
- c. The BoQ specified in the bid shall meet the requirements/specifications as cited in the tender.

We also accept that SIPCOT reserves the right to disqualify the bid in case any deviation to be found in our bid with respect to above cited criteria.

SIGNATURE OF THE BIDDER (with seal and address)

Annexure 9 : Price Bid

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
A		Sensors									
	1	Proximity inductive sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 10 - 30 V • Size : M30 • Sensing distance : 20 mm • Switch output : PNP • Switching element function : Normally open contact • Electrical connection : 3-core Cable with min. 2 M length 	10	Nos.	5	5				
	2	Proximity inductive sensor	<ul style="list-style-type: none"> • Operating voltage range DC: 10 - 30 V • Size : M18 • Sensing distance : 8 mm • Switch output : PNP • Switching element function : Normally open contact • Electrical connection : 3-core Cable with min. 2 M length 	10	Nos.	5	5				

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Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	3	Position transmitter	<ul style="list-style-type: none"> • Operating voltage range DC: 15 - 30 V • Sensing distance : 0 - 160 mm • Analogue output : 4 - 20 mA • Travel resolution : 0.05 mm • With T slot design • With IO Link protocol • Electrical connection: 3-core Cable with min. 0.2 M length 	4	Nos.	2	2				
	4	Position sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 15 - 30 V • Should be compatible with gripper • Electrical connection: Cable with 4 pin and min. 0.5 M length 	6	Nos.	3	3				
	5	Proximity magnetic sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 5 - 30 V • Switch output : PNP • Switching element function : Normally open contact • With T slot design • Electrical connection: 3- 	8	Nos.	4	4				

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Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
			core Cable with min. 4-5 M length								
	6	Proximity magnetic sensor	<ul style="list-style-type: none"> • Operating voltage range AC/DC : 5 - 30 V • Switch output : PNP • Switching element function : Normally open contact • With T slot design, reed type • Electrical connection: 3-core Cable with min. 2 M length 	8	Nos.	4	4				
	7	Pressure Sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 15 - 30 V • Operating pressure :0-10 bar • Switch output : PNP-2Nos (or) NPS-2Nos • Switching element function : Normally open/Normally closed contact • With LCD display 	16	Nos.	8	8				

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Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	8	Pressure Sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 15 - 30 V • Operating pressure : -1 to 1 bar • Switch output : PNP-2Nos (or) NPS-2Nos • Switching element function : Normally open/Normally closed contact • With LCD display 	10	Nos.	5	5				
	9	Flow Sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 15 - 30 V • Analogue output : 0-10 V • Operating pressure : 0-10 bar • Flow rate: Min. 1000 LPM • Switch output : PNP-2Nos (or) NPS-2Nos • Switching element function : Normally open/Normally closed contact • With LCD display 	4	Nos.	2	2				
	10	Force Sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 15 - 30 V • Force measuring range : 0 - 12 kN • Limit load 	4	Nos.	2	2				

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Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
			: 30 kN • Analogue output : 10-30 V , 4 - 20 mA								
	11	Retro Reflective Sensor	• Operating voltage range DC : 10 - 30 V • At work range : 0 - 1000 mm • Material electrical contact: Brass, gold plated • Max. current output : 50 mA • Light colour & type : Red LED	6	Nos.	3	3				
	12	Reflector	• Mounting: screw fixing • Material housing: suitable material	6	Nos.	3	3				
	13	Gap sensor to detect contactless distance	• Operating voltage range DC : 15 - 30 V • Supply pressure : 0.8 to 1.6 bar • Sensing range : 20 - 200 µm • Max. current output : 100 mA • Switch output : PNP (light switching), NPN (dark switching)	6	Nos.	3	3				

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Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	14	Distance Sensor	<ul style="list-style-type: none"> • Operating voltage range DC: 15 - 30 V • Distance measuring range: 40 - 100 mm • Max. current output: 100 mA • Switch output: PNP (light switching), NPN (dark switching) • Light colour & type: Red & LED • With IO Link protocol 	6	Nos.	3	3				
	15	Colour Sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 10 - 30 V • Distance measuring range : 12 - 30 mm • Max. current output : 100 mA • Switch output : PNP 	4	Nos.	2	2				
	16	Signal converter	<ul style="list-style-type: none"> • Operating voltage range DC: 15 - 30 V • Signal range: 0 - 10 V • Max. current output: 100 mA • Switch output: PNP-2Nos (or) NPS-2Nos • Switching element function: Normally open/Normally closed 	6	Nos.	3	3				

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Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
			contact • With IO Link protocol								
	17	Pressure sensor	<ul style="list-style-type: none"> • Operating voltage range DC : 15 - 30 V • Operating pressure : 0-10 bar • Switch output : PNP-2Nos (or) NPS-2Nos • Analogue output : 0-10 V, 4-20 mA • Switching element function: Normally open/Normally closed contact • With LCD display • With IO Link protocol 	10	Nos.	5	5				
	18	Pressure Sensor	<ul style="list-style-type: none"> • Operating voltage range DC: 15 - 30 V • Operating pressure: -1 to +1 bar • Switch output: PNP-2Nos (or) NPS-2Nos • Analogue output: 0-10 V, 4-20 mA 	10	Nos.	5	5				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
			<ul style="list-style-type: none"> Switching element function: Normally open/Normally closed contact With LCD display With IO Link protocol 								
	19	Flow sensor	<ul style="list-style-type: none"> Operating voltage range DC : 18 - 30 V Analogue output : 0-10 V, 4-20 mA Operating pressure : 0-12 bar Flow rate : Min. 100 LPM Switch output : PNP-2Nos (or) NPS-2Nos Switching element function : Normally open/Normally closed contact With LCD display With IO Link protocol 	6	Nos.	3	3				

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Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	20	Distance sensor	<ul style="list-style-type: none"> • Operating voltage range DC: 10 - 30 V • Distance measuring range: 40 ... 100 mm • Max. current output: 100 mA • Switch output: PNP (light switching), NPN (dark switching) • Light colour & type: Red & Laser • With IO Link protocol 	6	Nos.	3	3				
B		Sensor Accessories									
	21	Connecting cable with rectangle plug	<ul style="list-style-type: none"> • Rectangle design with 4 pin at one end and other end bare cables • Operating voltage range DC : 0 - 30 V • Length of the cable : Min. 3-4 m 	20	Nos.	10	10				
	22	Mounting bracket for sensors	<ul style="list-style-type: none"> • Material : Non Corrosive alloy steel • Type : L bracket with through hole 	10	Nos.	5	5				
	23	Connecting cable with M12 plug	<ul style="list-style-type: none"> • M12 plug at one end and other end bare cables • Operating voltage range AC/DC : 0 - 60 V 	6	Nos.	3	3				

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Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
			• Length of the cable : Min. 10 m								
	24	Connecting cable with M12 plug	• M12 plug at one end and other end bare cables • Operating voltage range AC/DC : 0 - 250 V • Length of the cable : Min. 5 m	6	Nos.	3	3				
C		Grippers									
	25	Gripper with 3 fingers	• Number of gripper fingers : 3 • Position detection : Hall effect sensor • Mode of Operation : Double acting • Operating pressure : 2 - 8 bar • Operating medium : Pneumatic	2	Nos.	1	1				
	26	Gripper with Bellows	• Type: Bellow gripper • Stroke per gripper jaw : 15.5 mm • Position detection : Proximity sensor • Mode of Operation : Single acting closed • Operating pressure : 4 -	4	Nos.	2	2				

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Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
			8 bar • Operating medium : Pneumatic								
	27	Suction cup	• Cup diameter: Min. 50 mm • Suction cup shape: Round flat • Suction cup material: NBR • Operating pressure: -0.7 bar • Operating medium: Pneumatic	4	Nos.	2	2				
	28	Suction cup	• Cup diameter : Min. 50 mm • Suction cup shape : Round extra deep • Suction cup material : NBR • Operating pressure : -0.7 bar • Operating medium : Pneumatic	4	Nos.	2	2				

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Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	29	Suction cup	<ul style="list-style-type: none"> • Cup diameter: Min. 50 mm • Suction cup shape: Round bellow • Suction cup material: NBR • Operating pressure: -0.7 bar • Operating medium: Pneumatic 	4	Nos.	2	2				
	30	Holder for Suction cups	<ul style="list-style-type: none"> • Assembly position : Vertical • Design structure : Vacuum connection at side • Operating medium : Pneumatic • Mounting type : With Internal thread 	4	Nos.	2	2				
	31	Adaptive gripper with accessories	<ul style="list-style-type: none"> • Size : 20 • Stroke : 66 mm • Load Capacity : 1 Kg 	2	Nos.	1	1				
	32	Vacuum generator	<ul style="list-style-type: none"> • Valve function : 2/2 solenoid with manual override • Operating Pressure : 2 - 8 bar • Max. suction rate with respect to atmosphere: 16 l/min 	4	Nos.	2	2				
D		Pneumatic Drives									

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Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	33	Double acting cylinder	<ul style="list-style-type: none"> • Piston diameter : 32 mm • Stroke : 150 mm • Piston rod thread : M10 • Cushioning : Pneumatic cushioning adjustable at both ends • Operating pressure : 0.6 – 12 bar 	2	Nos.	1	1				
	34	Double acting cylinder, Round	<ul style="list-style-type: none"> • Piston diameter : 10 mm • Stroke : 50 mm • Piston rod thread : M4 • Cushioning: Flexible cushioning rings at both ends • Operating pressure : 1.5 – 10 bar 	2	Nos.	1	1				
	35	Double acting cylinder, Round	<ul style="list-style-type: none"> • Piston diameter: 12 mm • Stroke: 100 mm • Piston rod thread: M4 • Cushioning: Flexible cushioning rings at both ends • Operating pressure: 1.5 – 10 bar 	2	Nos.	1	1				

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Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	36	Double acting cylinder	<ul style="list-style-type: none"> • Piston diameter : 32 mm • Stroke : 80 mm • Piston rod thread : M10 • Cushioning : Flexible cushioning rings at both ends • Operating pressure : 0.6 – 10 bar 	2	Nos.	1	1				
	37	Single acting cylinder	<ul style="list-style-type: none"> • Piston diameter: 10 mm • Stroke: 50 mm • Piston rod thread: M4 • Cushioning: Flexible cushioning rings at both ends • Operating pressure: 1.5 – 10 bar 	20	Nos.	10	10				
	38	Single acting expanding cylinder	<ul style="list-style-type: none"> • Size : 5 mm • Nominal length : 100 mm • Operating pressure : 0 – 6 bar Material membrane : AR Material nut : Steel 	14	Nos.	7	7				

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Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	39	semi-rotary actuator	<ul style="list-style-type: none"> • Size: 32 mm • Design: Vane • Mode of operation: double acting • Operating pressure: 2 – 8 bar • Swivel angle: 0 ... 270 deg • Position detection: For proximity sensor • Pneumatic connection : G 1/8 	2	Nos.	1	1				
	40	semi-rotary actuator	<ul style="list-style-type: none"> • Size: 25 mm • Design : Vane • Mode of operation : double acting • Operating pressure : 2 – 8 bar • Swivel angle : 0 - 270 deg • Position detection : For proximity sensor 	2	Nos.	1	1				
E		Valves									
	41	One way Flow control Valve	<ul style="list-style-type: none"> • Valve function : One-way flow control function for exhaust air • Nominal flow rate : Min. 185 LPM • Pneumatic connection for port 1: For tubing outside diameter 6 mm 	10	Nos.	5	5				

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Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
			<ul style="list-style-type: none"> • Pneumatic connection for port 2: 1/8" • Adjustment : Knurled screw • Operating pressure: 0.2 – 10 bar 								
	42	One way Flow control Valve	<ul style="list-style-type: none"> • Valve function: One-way flow control function for exhaust air • Nominal flow rate: Min. 100 LPM • Pneumatic connection for port 1: For tubing outside diameter 4 mm • Pneumatic connection for port 2: M5 • Adjustment: Knurled screw • Operating pressure: 0.2 – 10 bar 	8	Nos.	4	4				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	43	3/2 - way Solenoid Valve	<ul style="list-style-type: none"> • Size : 25 • Valve function : 3/2 closed, monostable • Type of actuation : Electrical • Nominal flow rate : 1000 l/min • Operating pressure : 2 - 8 bar • Design structure : Piston slide • Type of reset : Spring • Manual override : Detenting pushing • Pilot air supply : Piloted • Operating medium : Pneumatic • Pneumatic connection: G 1/4 • Operating Voltage: 24V DC 	4	Nos.	2	2				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	44	3/2 - way solenoid valve	<ul style="list-style-type: none"> • Size: 25 • Valve function : 3/2 closed, monostable • Type of actuation : Electrical • Nominal flow rate : 1000 l/min • Operating pressure : 2 - 8 bar • Design structure : Piston slide • Type of reset : Spring • Operating medium : Pneumatic • Pneumatic connection: For tubing outside diameter 6 mm • Operating Voltage: 12V DC 	10	Nos.	5	5				
	45	5/2 Solenoid Valve	<ul style="list-style-type: none"> • Size: 10 • Valve function: 5/2 closed, bistable • Type of actuation: Electrical • Nominal flow rate: 195 l/min • Operating pressure: 1.5 - 7 bar • Design structure: Piston 	6	Nos.	3	3				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
			slide • Operating medium: Pneumatic • Pneumatic connection: M5 • Operating Voltage: 24V DC								
	46	5/2 Solenoid Valve	• Size: 20 • Valve function : 5/2 closed, bistable • Type of actuation : Electrical • Nominal flow rate : 550 l/min • Operating pressure : 1.5 - 8 bar • Design structure : Piston slide • Operating medium : Pneumatic • Pneumatic connection : 1/8" • Operating Voltage : 24V DC	6	Nos.	3	3				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	47	5/2 Solenoid Valve	<ul style="list-style-type: none"> • Size: 10 • Valve function : 5/2 closed, bistable • Type of actuation : Electrical • Nominal flow rate : 195 l/min • Operating pressure : 1.5 - 7 bar • Design structure : Piston slide • Operating medium : Pneumatic • Pneumatic connection : M5 • Electrical connection : horizontal, 2 pin • Operating Voltage : 24V DC 	4	Nos.	2	2				
	48	one-way flow control valve	<ul style="list-style-type: none"> • Valve function: One-way flow control • Nominal flow rate: Min. 110 LPM • Pneumatic connection: For tubing outside diameter 4 mm • Adjustment: Knurled screw • Operating pressure: 0.2 – 10 bar 	10	Nos.	5	5				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
F		Manifold Assembly									
	49	Valve manifold with 5/2 solenoid valve	<ul style="list-style-type: none"> • Size: 10 • Valve function : 5/2 double solenoid – 5 Nos. • Operating Pressure : -0.9 - 10 bar • Valve type : Subbase valve • Exhaust port : Silencer • Operating voltage : 24 V DC 	2	Nos.	1	1				
	50	Valve manifold with 5/3 solenoid valve	<ul style="list-style-type: none"> • Size: 10 • Valve function : 5/3 double solenoid, mid position exhausted – 5 Nos. • Operating Pressure : -0.9 - 10 bar • Valve type : Subbase valve • Exhaust port : Silencer • Operating voltage : 24 V DC 	2	Nos.	1	1				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	51	Valve manifold with 3/2 solenoid valve	<ul style="list-style-type: none"> • Size: 10 • Valve function: 3/2, NC solenoid– 3 Nos. • Operating Pressure: -0.9 - 10 bar • Valve type: Subbase valve • Exhaust port: Silencer • Operating voltage: 24 V DC 	2	Nos.	1	1				
G		Pneumatic Accessories									
	52	Plug socket with cable for solenoids	<ul style="list-style-type: none"> • Electrical connection : Plug socket • Cable length : min. 2 m • Cable dia : Min. 6 mm • Operating voltage : 24 V DC • Switching position indicator: LED 	10	Nos.	5	5				
	53	Plug socket with cable for solenoids	<ul style="list-style-type: none"> • Electrical connection : Plug socket • Cable length : min. 2 m • Cable dia : Min. 5 mm • Operating voltage : 24 V DC 	26	Nos.	13	13				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
			• Switching position indicator: LED								
	54	Connecting cable for proximity sensors	<ul style="list-style-type: none"> • Operating voltage range AC/DC: 0 - 60 V • M8 plug at one end and other end bare cables • Length of the cable: Min. 5 m 	8	Nos.	4	4				
	55	Plug socket with cable for solenoids	<ul style="list-style-type: none"> • Electrical connection: Plug socket, 3 socket, 2 wires • Cable length: min. 2 m • Operating voltage: 24 V DC 	26	Nos.	13	13				
	56	Connecting cable for proximity sensors	<ul style="list-style-type: none"> • Operating voltage range AC/DC: 0 - 60 V • 4pin rectangular plug at one end and other end bare cables • Length of the cable: Min. 2 m 	10	Nos.	5	5				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	57	Pneumatic connector	<ul style="list-style-type: none"> • Type: Straight • Pneumatic connection port-1:1/4" male thread • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: -0.95 - 14 bar 	20	Nos.	10	10				
	58	Pneumatic connector	<ul style="list-style-type: none"> • Type: Straight connection • Pneumatic connection port 1:M5 male thread • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	8	Nos.	4	4				
	59	Pneumatic connector	<ul style="list-style-type: none"> • Type: Straight connection • Pneumatic connection port 1:M5 male thread • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	30	Nos.	15	15				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	60	Pneumatic connector	<ul style="list-style-type: none"> • Type: Straight connection • Pneumatic connection port-1:1/8" male thread • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	40	Nos.	20	20				
	61	Pneumatic connector	<ul style="list-style-type: none"> • Type: L connection • Pneumatic connection port 1:M3 male thread • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: -0.95 ... 14 bar 	12	Nos.	6	6				
	62	Pneumatic connector	<ul style="list-style-type: none"> • Type: L connection • Pneumatic connection port 1:1/8" female thread • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	5	5				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	63	Pneumatic connector	<ul style="list-style-type: none"> • Type: X connection • Pneumatic connection port 1: For tubing outside diameter 4 mm • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	5	5				
	64	Pneumatic connector	<ul style="list-style-type: none"> • Type: X connection • Pneumatic connection port 1: For tubing outside diameter 6 mm • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	5	5				
	65	Pneumatic connector	<ul style="list-style-type: none"> • Type: X connection • Pneumatic connection port 1: For tubing outside diameter 8 mm • Pneumatic connection port 2: For tubing outside diameter 8 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	5	5				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	66	Pneumatic connector	<ul style="list-style-type: none"> • Type: Push/pull sleeve • Pneumatic connection port 1: Push in sleeve for 8 mm • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	5	5				
	67	Pneumatic connector	<ul style="list-style-type: none"> • Type: Bulkhead • Pneumatic connection port 1: For tubing outside diameter 4 mm • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	5	5				
	68	Pneumatic connector	<ul style="list-style-type: none"> • Type: Bulkhead • Pneumatic connection port 1: For tubing outside diameter 6 mm • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	5	5				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	69	Pneumatic connector	<ul style="list-style-type: none"> • Type: Bulkhead • Pneumatic connection port 1: For tubing outside diameter 8 mm • Pneumatic connection port 2: For tubing outside diameter 8 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	5	5				
	70	Pneumatic connector	<ul style="list-style-type: none"> • Type: T connection • Pneumatic connection port 1: For tubing outside diameter 4 mm • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	5	5				
	71	Pneumatic connector	<ul style="list-style-type: none"> • Type: T connection • Pneumatic connection port 1: For tubing outside diameter 6 mm • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	5	5				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	72	Pneumatic connector	<ul style="list-style-type: none"> • Type: T connection • Pneumatic connection port 1: For tubing outside diameter 8 mm • Pneumatic connection port 2: For tubing outside diameter 8 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	5	5				
	73	Pneumatic connector	<ul style="list-style-type: none"> • Type: Y connection • Pneumatic connection port 1: For tubing outside diameter 4 mm • Pneumatic connection port 2: For tubing outside diameter 4 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	5	5				
	74	Pneumatic connector	<ul style="list-style-type: none"> • Type: Y connection • Pneumatic connection port 1: For tubing outside diameter 6 mm • Pneumatic connection port 2: For tubing outside diameter 6 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	5	5				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	75	Pneumatic connector	<ul style="list-style-type: none"> • Type: Y connection • Pneumatic connection port 1: For tubing outside diameter 8 mm • Pneumatic connection port 2: For tubing outside diameter 8 mm • Temperature dependent operating pressure: -0.95 to 14 bar 	10	Nos.	5	5				
	76	Plastic tubing	<ul style="list-style-type: none"> • Outside diameter : 4 mm • Inside diameter : 2.6 mm • Temperature dependent operating pressure : -0.95 to 10 bar • Colour : Translucent blue 	20	Nos.	10	10				
	77	Plastic tubing	<ul style="list-style-type: none"> • Outside diameter: 6 mm • Inside diameter: 4 mm • Temperature dependent operating pressure: -0.95 to 10 bar • Colour: Translucent blue 	20	Nos.	10	10				
	78	Plastic tubing	<ul style="list-style-type: none"> • Outside diameter: 8 mm • Inside diameter: 5.7 mm • Temperature dependent operating pressure: -0.95 to 10 bar • Colour: Translucent blue 	10	Nos.	5	5				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	79	Silencer	<ul style="list-style-type: none"> Material of silencer insert: Bronze Pneumatic connection: M5 male thread Sound pressure level: 72 dB(A) 	20	Nos.	10	10				
	80	Silencer	<ul style="list-style-type: none"> Material of silencer insert: Bronze Pneumatic connection: 1/8" male thread Sound pressure level: 76 dB(A) 	12	Nos.	6	6				
	81	Blanking plug	<ul style="list-style-type: none"> Pneumatic connection, port 1: M5 male thread Mounting type: Internal hex With sealing washer 	10	Nos.	5	5				
	82	On/Off valve	<ul style="list-style-type: none"> Operating pressure: 0 to 16 bar Type of actuation: manual Valve function: 3/2 bistable 	8	Nos.	4	4				
	83	Shut Off valve	<ul style="list-style-type: none"> Operating pressure: -0.95 to 10 bar Type of actuation: manual Valve function: 2/2 bistable Nominal flow rate: Min. 270 LPM Pneumatic connection: For 	8	Nos.	4	4				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
			tubing outside diameter 6 mm								
	84	FRL unit	<ul style="list-style-type: none"> • Pneumatic connection: M5 female thread • Standard nominal flow rate: 80 l/min • Pressure regulation range: 0.5 to 7 bar • Grade of filtration: 5 µm 	4	Nos.	2	2				
	85	FRL unit	<ul style="list-style-type: none"> • Pneumatic connection: 1/8" female thread • Standard nominal flow rate: 700 l/min • Pressure regulation range: 0.5 to 12 bar • Grade of filtration: 40 µm 	4	Nos.	2	2				
	86	Mounting bracket	Foot mounting bracket set for double acting cylinder	4	Nos.	2	2				
	87	Mounting bracket for Proximity sensor	<ul style="list-style-type: none"> • Size: 10 	8	Nos.	4	4				
H		Controllers									

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

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				QTY	SKU	Sriperumbudur	Hosur				
	88	PLC	<ul style="list-style-type: none"> • Digital input : Min. 16 Nos. • Digital output : Min. 8 Nos. • IO link master : 4 ports • Connectivity : Ethercat 	2	Nos.	1	1				
	89	HMI Unit	<ul style="list-style-type: none"> • 4" operator unit, wide touch screen • PLC interface: Ethernet/RS485 	2	Nos.	1	1				
I		Air Preparation Unit									
	90	FRL unit with on/off valve	<ul style="list-style-type: none"> • Actuator lock: Rotary knob with lock • Condensate drain: Manual rotary • Design structure: Filter regulator with pressure gauge proportional standard oil mist lubricator • Grade of filtration: 40 µm • Operating pressure: 1 - 15 bar • Nominal flow rate: 1500 l/min • Operating Medium: Pneumatic • Pneumatic connection: 1/2" female thread 	2	Nos.	1	1				
J		Training Kit									

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	91	Mobile workstation for pneumatics with two drawer unit	Mobile workstation should contain: + Double sided versatile Aluminium or steel structure based frame with grooves to mount components easily that will be used by the user to perform his work. + Double sided Single row rack to hold pneumatic, electronics components. + Two drawer units inside the workstation each should have at least four drawer units to keep working components. + All supporting accessories should be included. + Expected size of 50*35*35 inches.	2	Nos.	1	1				

	92	Basic Pneumatic Kit	<p>The Pneumatic Training Kit should contain</p> <ul style="list-style-type: none"> • 2x Double acting cylinder with 20 mm piston diameter and 100 mm stroke length • 1x Single acting cylinder with 20 mm piston diameter and 50 mm stroke length • 1x 5/2-way pneumatic valve with single side actuation, return spring and Poppet seat design • 3x 5/2-way pneumatic actuated valve with double side actuation, Poppet set design • 3x 3/2-way valve with push button actuation (Black), single side actuation return spring, normally closed and poppet valve design. • 1x 3/2-way valve with push button actuation (Yellow), single side actuation return spring, normally opened and poppet valve design. • 1x 5/2-way valve with selector switch actuation (Black), single side actuation returns spring and poppet valve design • 1x 3/2-way valve with roller lever actuation, idle 	2	Nos.	1	1				
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Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

			<p>return, single side actuation return spring, normally closed and poppet valve design</p> <ul style="list-style-type: none"> • 3x 3/2-way with roller lever actuation, single side actuation return spring, normally closed and poppet valve design • 2x Pressure Gauge with display range 0-16 bar • 1x Quick Exhaust Valve • 1x Shuttle valve (OR) • 1x Dual pressure valve (AND) • 1x Time delay valve N.C. • 2x One-way flow control valve • 1x Pressure sequence valve • 1x Filter regulator with pressure gauge and On/Off valve • 1x Pressure regulator with gauge • 1x Manifold with 6 self-closing non-return valves • 1x Plastic tubing, 4 mm blue color, 20 M • 1x Plastic tubing, 8 mm blue color, 5 M • 10x T-Connector, 4 mm 								
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Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	93	Basic Electro Pneumatic training kit	The Electro Pneumatic Training Kit must contain • 1x 3/2-way solenoid valve with return spring, piston spool design, manual override, and LED, NC • 1x 5/2-way single solenoid valve with return spring, piston spool design, manual override, and LED • 1x 5/2-way double solenoid valve, piston spool design, manual override, and LED • 1x Relay unit with three relays, 4 changeover switches, connection via 4 mm safety sockets • 1x Signalling unit with an illuminated pressure switch, three illuminated push button, each with a mini bulb, connection via 4 mm safety sockets • 2x Proximity sensor with light emitting diode and integrated protective circuit, reed contact, output through 4mm safety plug • 2x Cylinder mounting kit	2	Nos.	1	1				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

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				QTY	SKU	Sriperumbudur	Hosur				
			for sensor with screw • 1x PE convertor, it should be operated as three functions like pressure switch, vacuum switch and differential pressure switch. • 2x Electrical limit switch (1 left act. + 1 right act.) with micro switch, roller operated. It should be used as a N/O contact, N/C contact or a changeover switch • 1x 24 V DC Power supply unit, input voltage is 85 – 265 V AC, Output voltage is 24 V DC via 4 mm safety sockets • 1x Connection cables should be in red and blue colours, each with 4 mm plugs covered/Insulated for safety purpose in different lengths								

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	94	Automation technology learning system	The complete package consists of three stations; stacking magazine station, conveyor station and handling station, a compressor, three interface modules to connect the PC to the station, three CDs with simulation and controller software and manual and practising documents and comprehensive accessories + 1 stacking magazine station + 1 conveyor station + 1 handling station + 1 compressor + 3 x control packages with interface for PC/station and a mains cable	2	Set	1	1				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	95	Bio-inspired robotic Kit	<p>Bio-inspired robotic Kit contains the material to build three different robots</p> <ul style="list-style-type: none"> + Bio-inspired fish + Bio-inspired elephant + Bio-inspired chameleon <p>Components of the kit should be:</p> <ul style="list-style-type: none"> + Transparent body (approx. length: 200 mm, diameter 75 mm) + 3 - digital servos with min. 30 Ncm torque, + 1 - waterproof servo with min. 30 Ncm torque + Microcontroller with 32 bit Arduino compatible CPU and WLAN access point + Necessary shield for microcontroller + 13 - high precision injection molded construction parts, including 3 fin rays (1 large, 2 small) + High Quality Cardboard box with foam insert for easy and safe storage of the components + Control with every 	16	Set	8	8				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

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				QTY	SKU	Sriperumbudur	Hosur				
			smartphone, tablet with WLAN and Web Browser + Access to complete online learning environment, including tutorials, background about bionics, videos, learning paths with different time frames, download area with worksheets, CAD files, circuits and programs								
	96	Microcontroller for bio inspired robot	Microcontroller with 32 bit Arduino compatible CPU and WLAN access point	10	Nos.	5	5				
K		Softwares									

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	97	Pneumatic simulation software	<p>Number of users : 3</p> <p>The simulation tool pneumatics should include a circuit creation tool, a high-performance simulation tool and a comprehensive e-learning tutorial. This software package should be provide keeping in mind that this should be a handy tool for the trainers in Educational Training Institutes & corporate training centres to go hand in hand with the latest in the industry.</p> <p>With this software,</p> <p>+ The software should be possible to simulate circuits of pneumatics, electro pneumatics, servo pneumatics, vacuum technology, sensor technology, safety and digital technologies.</p> <p>+ Functional features of products & components can be understood</p> <p>+ The virtual cut sectional</p>	2	Nos.	1	1				

Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
			animation lets the students to know the internal details of the product & to understand the functions simultaneously + Trainers can explain about the products and can educate the students at a very short period, so as to have ample time on using trainer kits to gain more practical knowledge + Even a non-technical person can easily understand the concepts of pneumatic products								

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	98	Software for creating virtual Learning Environments	<p>Number of Users: 1</p> <p>The software should be industrially tested, extremely powerful platform for 3D modelling, 3D simulation models for automation technology.</p> <p>The software must have different mechatronics modules, Process control modules, Mobile robot, Robotic module virtually.</p> <p>The software should control and simulate more than 100 type of simple to complex models like mechatronics, robotics, process etc., (virtually).</p> <p>The software should cover main areas in:</p> <ul style="list-style-type: none"> + Robot programming + PLC programming + Troubleshooting + Production planning and production control <p>It should combine the following functions in one common interface.</p> <ul style="list-style-type: none"> + 3D real-time simulation + System and production line design based on model libraries + The program offers an integrated training program 	2	Nos.	1	1				
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Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

			<p>and a variety of different robot models.</p> <p>+ All the required basics for automation with robots should be possible by in built applications.</p> <p>+ Numerous graphics and animations to explain technical terms and facts, videos on a large number of industrial applications involving robots.</p> <p>+ Sample programs for every model, technical documentation including instructions on processing.</p> <p>+ Communication via OPC client/server</p> <p>+ Simulation of the mobile robot platform</p> <p>+ Virtual human with 30 independent degrees of freedom</p> <p>+ The complex model library contains 3D process models of selected mechatronic stations, various belt and warehouse systems.</p> <p>+ In manual mode, individual step movements should be made</p>								
L		Accessories				0	0				

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Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	99	Valve terminal with Control app - 1	<p>Operating pressure: 3 - 8 bar</p> <ul style="list-style-type: none"> • Valve function: can be allocated using the motion app • Piezo technology valves with configurable functionality which should operated via software must control the following parameters like pressure, flow, vacuum and position <p>By using the system, student should able to learn how to control following:</p> <ul style="list-style-type: none"> • Controlling Pneumatic Cylinder speed with the help of Mobile apps. • Controlling Pneumatic cylinder position in closed loop with the help of Mobile apps. • Controlling Pneumatic Gripping force with the help of Mobile apps. • Controlling Vacuum Force by Varying input pressure from Valve terminal. • End Position Cushioning 	2	Set	1	1				

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Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
			with help of external sensor and DCV valve terminals (Soft Stop and Soft Start) <ul style="list-style-type: none"> • Valve configuration and its functionality excessed via software on any one valve (i.e. configuring valve as 3/2, 4/2 or 4/3 via software) • PLC with Min. 8 DI/DO 								

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	100	Valve terminal with Control app - 2	<p>The setup should have Piezo technology valves with configurable functionality which should operated via software must control the following parameters like pressure, flow, vacuum and position – 1 No.</p> <ul style="list-style-type: none"> • Double acting cylinder with 32 mm piston dia, min. 100 stroke length Pneumatic cushioning adjustable at both ends with pneumatic connector – 1 No. • Double acting cylinder with 32 mm piston dia, min. 100 stroke length Flexible cushioning rings/plates at both ends, with pneumatic connector – 1 No. • vacuum generator with ejector pulse, Max. suction rate with respect to atmosphere: 48.8 l/min -1 No. • air reservoir, 750 ml, alloy steel, non-corrosive metal tank – 1 No. • Pressure sensor, Analogue output 0-10 V, 4-20 mA, IO link feature – 1 No. • Precision pressure regulator with ¼” female thread -1 No. 	2	Set	1	1					
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Tender for Provision of Technical Infrastructure for SIPCOT Industrial Innovation Centres at Sriperumbudur and Hosur – Industrial Sensing and Control Systems

			<ul style="list-style-type: none"> • Accessories – 1 No. • Small box to store all items – 1 No. <p>By using the system, student should able to learn how to control following:</p> <ul style="list-style-type: none"> • Controlling Pneumatic Cylinder speed with the help of Mobile apps. • Controlling Pneumatic cylinder position in closed loop with the help of Mobile apps. • Controlling Pneumatic Gripping force with the help of Mobile apps. • Controlling Vacuum Force by Varying input pressure from Valve terminal. • End Position Cushioning with help of external sensor and DCV valve terminals (Soft Stop and Soft Start) • Valve configuration and its functionality accessed via software on any one valve (i.e. configuring valve as 3/2, 4/2 or 4/3 via software) 								
M		Training / Consultancy									

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Block Name	BOQ Items	Equipment / Product	Specification/Description	Total Quantity Required		Delivery Location		Model/Part Number	Unit Price (INR)	Unit Price (INR - incl. GST)	Total (cl.5 x cl.11)
				QTY	SKU	Sriperumbudur	Hosur				
	101	1. Comprehensive onsite/remote training services covering all hardware/software modules listed above offered within 30 days from the delivery of items, covering a min. of 30 users/trainees. 2. Additional annual refresher/upgrade training for a min. of 10 days offered onsite/remote for upto 1 year from the date of first training session. 3. Consultancy for Product development 3 days every year for 5years		1	Nos.	Yes	Yes				
N		Warranty									
	102	1. Minimum 1 year warranty for all hardware/software items including onsite technical support & service, replacement, spares & repairs.		1	Nos.	Yes	Yes				
	TOTAL (in Rs.)										

Amount in Words: Rupees _____ only

SIGNATURE OF THE BIDDER
(with seal and address)

Annexure 10 : Annual Maintenance Charges Post Warranty

S.No.	Year	Amount (In Rs.)
1	For the First year after the expiry of the warranty	
2	For the Second year after the expiry of the warranty	
3	For the Third year after the expiry of the warranty	
4	For the Fourth year after the expiry of the warranty	
5	For the Fifth year after the expiry of the warranty	

SIGNATURE OF THE BIDDER
(with seal and address)

Note : The above Charges do not form part of the evaluation of the bidder for the current bidding process.

Annexure 11 : Checklist of Submissions

S.No	Document	Enclosed (Yes/No)	Reference in the Bid (Page No.)
1.	Covering Letter on the Letter Head of the Bidder addressing to MD, SIPCOT as per the Annexure 1		
2.	Copy of the Tender Document duly signed on all pages as token of acceptance of Tender Conditions		
3.	Demand Draft no _____ dated _____ for Rs.30,000 in favour of “State Industries Promotion Corporation of Tamil Nadu Limited” , payable at Chennai, towards Earnest Money Deposit.		
4.	Power of Attorney for the Authorized Signatory for signing the tender		
5.	Details of the Bidder as per the Annexure 2		
6.	Copy of Certificate of Incorporation/Registration		
7.	Copy of Memorandum of Association and Articles of Association		
8.	Copy of Registered Partnership Deed, in case of Partnership		
9.	Copy of PAN & Copy of GST Registration Certificate		
10.	Annual Turnover of the Bidder for the past three audited financial years as per Annexure 3		
11.	Copy of IT Returns for the past 3 years		
12.	The Annual Report / certified copies of Balance Sheet, Profit & Loss statement along with schedules for the last 3 consecutive financial years i.e. FY 2016-17, 2017-18 and 2018-19 (or) 2017-18, 2018-19 and 2019-20.		
13.	Declaration for not having blacklisted either by SIPCOT or by any other Govt. agencies as per Annexure 4		
14.	Declaration for not having tampered the Tender documents downloaded from the websites www.sipcot.tn.gov.in and www.tenders.tn.gov.in as per Annexure 5		
15.	Certificate of the OEM/Authorized Dealer to the effect that the Bidder manufactures such and such a make of the equipment tendered.		
16.	In case of Authorized Dealers, Authorization Certificate from respective OEM stating the duration of the dealership engagement as per Annexure 6		
17.	Self-Declaration on License/Certifications for the equipment procured by the Bidder through this tender		

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	as per the Annexure 7		
18.	Purchase Orders and Invoice copies as per the Qualification Criteria 2.1		
19.	Details of the Service Centres of the OEMs in Tamil Nadu		
20.	Compliance with the BOQ in terms of quantity and technical specifications as per the Annexure 8		
21.	Price Bid as per the Annexure 9		
22.	Annual Maintenance Charges post warranty period as per Annexure 10		

Signature of the bidder with seal