

Supply Installation Commissioning and Training of Collaborative Robot with smart gripper.

Brief description of work

Installation commissioning and training of collaborative robot with smart gripper has to be carried out as per required scheme of operation at the indenters site. The robot with gripper has to be programmed to pick, place and tilt Stainless steel container of 3Kg. Detailed scheme showing sequence of operation will be provided to the supplier at the time of execution. Entire system has to be housed in a stainless steel enclosure having dimensions of 2.5m x 1m x 1m approximately. Scope of supply, installation, commissioning and training are detailed as under.

Sl.#	Item/Task	Description/Specification		Quantity
1	Robot	Payload	Minimum 5 kg	1 Nos.
		Reach	Minimum 850 mm	
		Degrees of freedom	6 Rotating Joints [Each +- 360 degree]	
		Programming	Through teach pendant and manual free drive operation. (Robot should have Freedrive feature to manipulate manually by using hands, Robot arm should also be moved either by Translating/Rotating the Robot Tool or moving Robot Joint Individually.	
		Robot type	Collaborative. Built-in Force sensing to automatically stop operating when encounter obstacle in their route.	
		Repeatability	± 0.1 mm	
		Ambient Working Temperature Range:	0-50°C	
		Typical TCP speed	1 m/s	
		IP Classification:	IP54	
		Mounting direction	Should be compatible for mounting in any orientation	
		I/O Port:	Digital IN&OUT Minimum 2, Analog Minimum 2	
		Foot Print:	Less than Ø150 mm	
	Mass of arm including cable	Less than 20 Kg.		
	Communication &/power cables with isolator plugs for robot			1 Set
2	Gripper	Stroke per Jaw	10mm	1 Nos.
		Gripping Force	1000 N-1500 N	
		Controllable gripping parameters	Gripping force, travel time, switch points	
		Weight	Less than 1.8 Kg	
		IP classification	IP64	
		Mandatory safety feature	Self-locking in case of power failure	
		Communication/& power cable for gripper		
3	External axis	Stroke	2400 mm	1 Nos.
		Moving mass carrying capacity	Minimum 35kg	
		Max speed	500 mm/s	
		Communication	Compatible for controlling from robot pendant	
		Accessories for external axis	Linear drive, Axial kit, Gearbox, Servo motor AC, Proximity sensor, Profile mounting, Switch lug, Cable, sensor etc.	Complete set compatible for mounting the external servo axis.

4	Control Unit for robot, gripper and external axis	IP classification	IP20	1 Set
		Communication	MODBUS, ProfiNet, EtherNet/IP, TCP/IP	
		Input/ Output (Min Nos.)	Digital IN&OUT 16, Analog IN&OUT 2	
		IO Power Supply	24V 2A	
		Power Source	100-240V AC, 50-60Hz	
	Teach pendant for robot, gripper and external axis	IP classification	IP20	1 Nos
		Type	Touchscreen with graphical user interface. Single teach pendant should control robot and external axis. (Total 7 axis, 6 for Robot and 1 external axis)	
		Communication	Compatible for robot, gripper and external axis	
		Max. weight	2Kg	
		Cable length	Minimum 4m	
5	Installation & Commissioning	Supplier has to install and commission the system at specified area at the indenter's site. Demonstration of the system as per required scheme of operation (pick, place and tilt operations) to be performed.		
	Training	Comprehensive training for operation, programming and maintenance of the system has to be provided by the supplier at his site for 4 Nos. of operators/engineers from BARC.		
	Acceptance criteria	Pre-dispatch		
		The supplier has to program the system for pick, place and tilt operations at his site as per scheme provided by the indenter. Comprehensive training for operation, programming and maintenance of the system has to be provided by the supplier at his site for 4 Nos. of operators/engineers from BARC.		
			Final acceptance	
		Installation, commissioning and demonstration of the system has to be carried out at the indenter's site at specified location and training assistance to be provided. Successful operation of the system by the trained operators at indenter's site will be considered as final acceptance criteria.		
Packing and Delivery	Delivery of materials at site shall be responsibility of the supplier. The supplied items shall be packed and protected so as not to suffer any deterioration, damage or breakage during shipment. The supplier shall not ship the material without prior approval of the purchaser's inspector.			
Guarantee	The items should be guaranteed for 18 months of satisfactory operation after receipt at our stores.			

Terms and Conditions

- It is mandatory to submit catalogs of items under scope of supply. The bidder should clearly indicate the make and the exact order code for the item/s being offered by him. Offers which do not contain catalogs of the items will not be considered as technically acceptable.
- Technical evaluation of training, installation & commissioning resources of the supplier will be evaluated on the basis of Performa given as Annexure-1. It is mandatory to submit Performa to consider for technical evaluation.
- Offer shall be considered complete only if the scope covers supply, installation, commissioning and training. Incomplete offers will not be considered technically acceptable.
- Delivery period; 3 months from issue of purchase order.
- Place of delivery; FF-INRPO Stores, BARC, Tarapur
- Payment; 80% against supply, 20% against final acceptance.

Annexure-1
Performa

Sl.#	Supply Installation Commissioning and Training of Collaborative Robot with smart gripper.	
1.	Name of supplier	
2.	Whether the scope of your offer covers supply, installation, commissioning and training.	Yes/No
3.	Whether catalogs of robot, gripper, external axis and control unit submitted along with offer.	Yes/No
4.	Any previous experience in installation commissioning and training of such systems? If yes mention name of task executed.	Yes/No
5.	In case of no previous experience in installation commissioning and training, will this task be outsourced?	Yes/No
6.	Does the supplier/outsourced supplier has in house training facility?	Yes/No
7.	Are you offering deviations in any way from the specification for any of the item, if yes mention deviation and item clearly.	Yes/No