



BHARAT HEAVY ELE Date :
Heavy Power Equipm Due Date :
Hyderabad - 502 032. Supplier Qtn. No.:
Phones : 23182514/2. Date :
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SUPPLY OF DIGITAL THICKNESS MEASURING INSTRUMENT- 01 NO

NOTE:-

1. The "Offered" Column and where applicable, the "Deviations" & "Remarks" Column of this format shall be filled in by the Vendor and submitted along with the offer. Inadequate / incomplete, ambiguous, or unsustainable information against any of the clauses of the specifications/requirements shall be treated as non-compliance.
2. The offer and all documents enclosed with offer should be in English

Sl No.	Description of BHEL requirement	Offered	Deviations	Remarks
1.0	Prequalification Requirement			
1.1	The suppliers shall give a list of atleast two customers in INDIA with contact numbers to whom similar instruments are supplied,preferably Govt./ public Sector			
1.2	The supplier shall be OEM or the authorised distributor/agency. The supporting documents shall be submitted			
2.0	General requirements:			
2.1	The instrument shall be capable of measuring coating thickness, plated electrolytically, on both ferrous and non-ferrous metal substrates(Common Probe for ferrous and non ferrous substrates) and shall be handheld type.			
2.2	The testing method shall be non-destructive			
2.3	The instruments shall measure the following platings:			
	a Copper over Steel			
	b Zinc over steel			
	c Cadmium over steel			
	d Chromium over steels			
	e Tin over steel			
	f Silver over steel			
2.4	The instruments shall be capable of working in the electro-plating environment			
3.0	Technical data:			
3.1	The instrument shall measure the coating thickness 0 to 1000 microns			
3.2	The accuracy of the instruments = ± 1 micron			
3.3	The measurement parameter of the instrument = microns (10^{-6} m)			
3.4	The instrument shall be capable of working with the batteries. It is preferable if the supplier can give additional facility for working with 220V AC. The batteries shall be available in India.			
3.5	The instrument shall be capable of measuring coating thickness of inner walls of cylindrical holes of diameter of 50 mm. The supplier shall indicate the minimum internal diameter on which the plating thickness can be measured. It should measure both external and internal			

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3.6	Response time of the instrument for indicating the value shall be indicated				
3.7	The instrument shall be capable of giving same values when tested at the same area.				
4.0	Features:				
4.1	The instrument should have large digital display and it shall be visible even in the darkness				
4.2	The measuring instrument/ probe shall withstand attack by solvents and other electropilating chemicals				
4.3	The probe shall be wear resistant.				
4.4	The probe shall be detachable.				
4.5	The instrument shall be portable (handy) and easy to move from one place to the other				
4.6	The instrument shall be capable of working in temperature range of 0°C to 50°C with the accuracy, precision, repeatability as indicated above.				
4.7	The instrument shall have provision for automatic setting of zero				
4.8	The length of the connector cable shall be minimum 500 mm. Provision shall be made for extension				
5.0	Calibration:				
5.1	The Supplier has to give calibration blocks/ standards for 10 μ , 40 μ , 100 μ , 300 μ , 500 μ , 1000 μ .				
5.2	Calibration procedure shall be given.				
5.3	The supplier shall also quote for additional calibration blocks if any.				
5.4	The instrument should have National/International calibration procedures: ISO, SSPC, Swedish, Australian or Equivalent.				
6.0	Spare				
6.1	Essential spares shall also to be indicated that will be part of standard supply.				
7.0	Documentation				
7.1	The supplier shall also give calibration certificate traceable to national/ international standards/ bodies				
7.2	The suppliers shall give three copies of the operating manual along with the maintenance manual. The manual shall be in English Language				
8.0	The supplier's Service Engineer shall install and commission the instrument at BHEL and demonstrate its features and working to the BHEL technical Personnel				
9.0	The instrument shall be guaranteed for its satisfactory performance for atleast one year from the date of commissioning				
10.0	Delivery period to be indicated by supplier				

B RAMAKRISHNA
AGM/TD

MANOJ KUMAR SINGH
Sr.Engineer/CWS

THIRUMALES K
Sr.Engineer/ M&S (CWS)