



**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL
UNIVERSITY, LONERE**

At. Po. Lonere, Tal. Mangaon, Dist. Raigad 402 103 MS (www.dbatu.in)

INVITATION FOR QUOTATION

06 MAY 2026

Our Ref No. : DBATU/store/Ele.Engg/Single-Phase & Three-Phase Induction Motor Kit Laboratory
Trainer /2026/ **2153**

Date: 05/05/2026

Quotation For: Single-Phase and Three-Phase Induction Motor **Due On: 19/05/2026**

Laboratory Trainer Kits

Date of Opening: 20/05/2026

Time: 11:30AM

To,

Sub: QUOTATION FOR THE SUPPLY OF STORE

Dear Sir,

Your quotation for the items listed overleaf, may please be submitted to the under signed, so as to reach this Office not later than: **19/05/2026**

While submitting your quotation, the following procedure may please be observed and other points borne in mind.

1. The maker's name must be specified.
2. The "Terms and Conditions" for supply and delivery of stores, should be clearly indicated in the quotation, stating whether rates are, inclusive of all taxes, Packing and forwarding charges Freight charges, etc. or not, however rates offered as including all taxes will be more welcome.
3. If packing and forwarding charges are to be charged separately, it should be so clearly stated in your quotation.
4. Please mention clearly whether consignment would be Ex-Godown, Ex-Shop, of F.O.R. dispatching stations. Preferably terms offered as "Delivery of consignment of stores, on F.O.R."
5. Envelope should be super-scribed "**Quotation for reference No..... of dated.....**" It should also be superscripted as per the format given above.
6. The quotation would be opened as per date and timing given above, if desired by you, you may depute an authorized representative with a letter of authority to be present at the time of opening of the quotation at this Office on the aforesaid day, date & time.
7. Your quotation must be valid for a minimum 30 (Thirty) working days from the date of its opening.
8. Quotation received after the date of opening may not be taken into consideration.
9. Items tendered should confirm to the specification shown in the attached list when and where, full or no specifications are indicated against items in the list. Kindly furnish your full specification in accordance with accepted standards against each item tendered. Where reference to catalogue is made, the relevant catalogues/ Pamphlets/ Literature should accompany the quotation.
10. Your quotation should be for all new items and not for second hand.



11. Please state whether items will be available Ex-Stock. If not the minimum period for delivery, or for supplying the items or stores.
12. It should be clearly stated whether GST, Insurance, Freight or packing and forwarding charges, or any other taxes and duties, etc. leviable.
13. It would be appreciated if illustrated catalogues/Literature etc. is furnished with the quotation.
14. Expression to as "Complete with standard Equipment" complete with standard accessories "Equipment to" As good as should be avoided. If at all their use is unavoidable then it should be very specifically indicated as to what exactly they mean and what exactly would be supplied under them. Any ambiguity or vagueness should be avoided.
15. For convenience, kindly adopt while quoting the same serial Nos. as given in the list detailed below.

Thanking You.

Yours faithfully,


Registrar

Dr. Babasaheb Ambedkar Technological University,
Lonere

Specification

Single-Phase Induction Motor Trainer Kit

Component	Technical Specifications	Brands
1 phase Induction Motor	1 HP (0.75 kW), 230V AC, 50Hz, 1440 RPM, Capacitor Start/Run type, Insulation Class 'B' or 'F'.	Crompton Greaves,
1 phase Motor Trainer Kit	Panel with AC Voltmeter (0-300V),	Meco
	Ammeter (0-10A),	Meco
	starting/running capacitor terminals	
	1 phase MCB.	ABB
	Wattmeter (LPF/UPF),	Meco
1 phase Autotransformer	230V Input, 0-270V Output, 10A capacity, manual copper wound (used for Blocked Rotor test).	AE (Automatic Electric), Bico, Vinytics
Mechanical Loading Unit	Brake drum (Pulley) with water-cooling, rope brake, and dual spring balances (0-10 kg).	
Measurement Tools	Digital Non-contact Tachometer	Meco Instruments
	Multi-function Power Meter (for V, I, W, PF).	Meco

1. No-Load Characteristics (SPIM)

2. Motor alone on supply (Variac if available), measure input voltage, current, real power, speed → plot no-load current/power vs voltage.

3. Load Characteristics

4. Apply mechanical load via **prony brake** or weight loading, record torque vs speed, current, power factor, slip.
5. **Speed Control**
6. For single-phase motors, true **speed control via supply frequency variation** is not effective. Alternatives are:
 - a. **Voltage control** with variac (affects torque) — basic demonstration.
 - b. **Soft starter** (reduces inrush, less stress during start).
 Note: Single-phase VFDs exist but are uncommon and have limited control range vs three-phase VFDs; best option is often to use a **three-phase motor with a single-phase to three-phase converter** for variable speed.
7. **Load Test Setup**
8. As per common lab experiment lists, required apparatus often includes a **variac**, meters, tachometer, and load device

Experiments for 3 phase Induction Motor kit

Component	Technical Specifications	Brands
3 phase Squirrel Cage Induction Motor	1 HP (0.75 kW), 415V, 50Hz, 1440 RPM (4-Pole), Star/Delta terminals brought to a panel, Insulation Class F.	Crompton Greaves
3 phase Induction Motor Trainer Kit	Control panel with 3 phase MCB	ABB
	Star-Delta Starter	
	Voltmeter (0-500V)	Meco
	Ammeter (0-5A)	Meco
	Dual Wattmeter's (2 Nos. 1000W).	Meco
3 phase Autotransformer (Variac)	415V Input, 0-470V Output, 5A or 10A capacity, Air-cooled, Manual copper wound.	AE (Automatic Electric), Bico, Vinytics
Brake Test Unit	Water-cooled aluminium pulley, rope brake, and two spring balances (0-10 kg) with mounting frame.	
Variable Frequency Drive (VFD)	1 HP, 3phase Input/Output, 0.75kW, for Speed Control experiments.	Schneider Electric
Tachometer	Digital Non-contact Optical Type.	Meco

1. **No-Load Characteristics (3-phase induction motor):** motor, voltmeter, ammeter, tachometer (measure no-load current, power, speed at rated voltage). Use DOL starter and meters.
2. **Blocked Rotor / Locked-Rotor (equivalent to DC load checks):** apply blocked-rotor condition (shorted mechanical shaft) at reduced voltage and measure current / torque — need a variable voltage source or autotransformer (variac) for safe tests and instruments. **Autotransformer (variac)** often used.
3. **Load Characteristics / Torque-Slip curve:** motor + loading device (prony brake or dynamometer) + tachometer + meters to plot torque vs slip (speed).
4. **Speed Control:** primary practical method = **V/f via VFD** (clean, efficient) — for slip-ring motors only, you can also do **rotor resistance control** (requires slip-ring induction motor & external rotor resistor) or **pole changing** (requires multi-winding motor designed for pole change). For lab teaching, VFD is the recommended modern method