



SALIENT FEATURES :

- 01 Facilitates easy and safe wiring by students due to use of 4mm sturdy Shrouded banana patch cords & shrouded socket arrangements.
- 02 All machines are mounted on finely painted sturdy base frame with easy machine interchangeability. Use of gear coupling facilitates screwless coupling. interchangeability. Use of gear coupling facilitates screwless coupling.
- 03 With due emphasis on student safety machines operate upto 300W power levels and up to 1500 RPM, without compromising on didactic use. Able to draw all graphs.
- 04 Trunion mounted DC Integrated machine is used as Dynamometer for loading other machines (Motors / generators both); unlike magnetic powder brake or eddy current brake which can load only coupled Motors and not generators, with facility to measure shaft power using electronic torque / speed Measurement

DC MOTOR COUPLED 1PH. AC MOTOR TRAINER

Name of the Experiments

- | | |
|---------------|--|
| Experiment-1 | speed torque curve of DC shunt motor with 1 phase AC integrated motor |
| Experiment-2 | speed torque curve of DC series motor with 1 phase AC integrated motor |
| Experiment-3 | Speed torque curve of separately excited DC motor with 1 phase AC integrated motor |
| Experiment-4 | Speed torque of DC compound motor with 1 phase AC integrated motor |
| Experiment-5 | v-i efficiency curve of DC shunt generator with 1 phase AC integrated motor |
| Experiment-6 | v-i efficiency curve of DC series generator with 1 phase AC integrated motor |
| Experiment-7 | v-i efficiency curve of DC separately excited generator with 1 phase AC integrated motor |
| Experiment-8 | v-i efficiency curve of DC compound generator with 1 phase AC integrated motor |
| Experiment-9 | v-i efficiency curve of occ of shunt generator with 1 phase AC integrated motor |
| Experiment-10 | speed torque curve of split phase induction motor |
| Experiment-11 | speed torque curve for CSIR |
| Experiment-12 | Speed torque curve of CSCR |

Continues-1/3

We are committed to the continuous development of our products, and therefore reserve the right to amend specifications without prior notice.

OMEGA ELECTRONICS

Panels Provided

01 Aluminum Machine trainer Rack.....	20300	Qty.1
02 Multifunction Meter (Single Phase/Three Phase AC 50Hz).....	20302	Qty.1
03 1 Phase Motor, Alternator & Sync. Motor.....	20305	Qty.1
04 DC voltmeter & Ammeter and Torque Measurement Meter.....	20306	Qty.1
05 Variable DC Power Supply.....	20307	Qty.1
06 Input Single Phase DOL Starter Panel AC DC Fix / Variable Supply.....	20308	Qty.1
07 Lamp Load.....	20313	Qty.1
08 Extension Board.....	20315	Qty.1

Motors Provided


01 DC Integrated (Trunion Mounted) Motor.....	20501	Qty.1
02 1 Phase AC Integrated Motor.....	20505	Qty.1

Accessories Provided


01 Hand held digital Tachometer.....	01
02 Shrouded connecting leads 4mm 50 / 100cm assorted Red & Black	



Technical Specification of Motors



DC INTEGRATED (TRUNION MOUNTED) MOTOR - TYPE-20 501
Voltage : Varm= 180V Vfield = 180V
Capacity -300W/2 Pole m/c, RPM - 1500, Shrouded Socket - 12
Rotor Construction: Standard commutator / brush arrangement with laminated stack, brought out on 2 terminals
Stator construction : Separately excited field winding with laminated solid yoke 2 pole and series winding brought out on 4 terminals.
Toque characteristic: Provision of load cells 6 Kg. 2 No. assembly to measure the torque .



1 PHASE AC INTEGRATED MOTOR - TYPE-20 505
Voltage : 230 VAC, 50Hz
Capacity -300W/4 Pole m/c, RPM - 1500 Shrouded Socket - 18
Rotor Construction : Diecast Squirrel cage motor
Stator construction : Two windings brought out on 4 terminals for main and auxilliary. These will be used to configure different motors Split phase, CSCR, CSIR.

Continues-2/3

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OMEGA ELECTRONICS

Works:
28E & F, Malviya Industrial Area,
Jaipur-302 017 (INDIA)
Phone: 0141-2751559

E-mail : info@omegaelectronics.net
: omegajaipur62@gmail.com

Marketing Division:
B-28, Fateh Singh Scheme, Opp. Rajputana
Palace Sheraton, Jaipur-302006 (INDIA)
Phone : 091-141-2375647, 2379223

www.omegaelectronics.net

**DC MOTOR COUPLED
1PH. AC MOTOR TRAINER
OMEGA TYPE-20 603**

Technical Specification of Panels



**ALUMINUM FRAME - MODULAR
PANELS TYPE-20 300.**

Electrical motor trainer rack made up aluminium profile size 40×40mm, foldable and light in weight 10 panel setup can be interchange conveniently to perform experiments. Dimension Length 1100×Height 1000×Depth 350mm.



**VARIABLE DC POWER SUPPLY
TYPE-20 307**

- 1 Half bridge SCR based 0V-200V / 3 Amp cosine firing with linear characteristics, 3 Nos. Switch SPDT to On/Off with indication
- 2 Three Nos. of these supplies required for DC Armature, DC motor field and AC generator field.
- 3 Shrouded socket 8Nos.



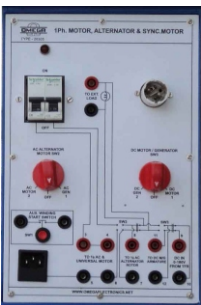
**MULTIFUNCTION METER (Single
Phase/ Three Phase AC 50Hz)
TYPE-20 302**

- 1 Bidirectional Multifunction Meter
- 2 3 Phase 4 wire, 440V, Current 5A
- 3 LED display,
- 4 Aux supply 230V, 45-65Hz, 5W
- 5 To measure parameters i.e Voltage Current., KVA, Frequency, Power factor, Active Power (W), Reactive Power (vary) etc.
- 6 Shrouded socket 08Nos. etc.



**INPUT SINGLE PHASE DOL
STARTER PANEL AC DC FIX /
VARIABLE SUPPLY
TYPE-20 308**

- 1 MCB 2 pole 10A with indicator
 - 2 Emergency Switch
 - 3 Push button switch for Stop/Start
 - 4 DOL 9A Contactor with 230V / 50 Hz / 11VA Coil .
 - 5 Shrouded socket 4Nos.
- Variable AC Supply (0-200V)**
1 Shrouded socket 6Nos.
- Fix/Variable DC Supply (0-200V)**
1 Shrouded socket 4Nos.



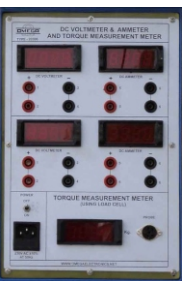
**1 PH. MOTOR, ALTERNATOR &
SYNC. MOTOR
TYPE-20 305**

- 1 1 ph. MCBs of 4A/1.6A 1 each.
- 2 2 no. 2P2W selector switches to run as 1ph. Alternator then as synchronous motor.
- 3 2A push button switch to simulate as centrifugal switch.
- 4 1 Lamp load holder with lamp
- 5 Shrouded socket 14Nos.



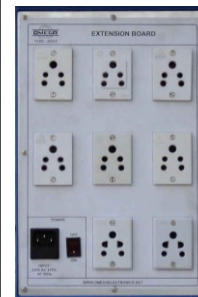
**LAMP LOAD
TYPE-20 313**

- 1 3 Nos. Lamp 100W with Holder & switch
- 2 Shrouded socket 12Nos.



**DC VOLTMETER & AMMETER
WITH TORQUE MEASUREMENT
METER
TYPE-20 306**

- 1 TWO DPM DC voltmeter (0-1000V)
- 2 TWO DPM DC Ammeter (0-20A)
- 3 Torque Measurement Meter
- 4 Shrouded socket 16Nos.



**EXTENSION BOARD
TYPE-20 315.**

- 1 Operating Voltage 230VAC ± 10% at 50Hz
- 2 ON OFF Switch with indicator
- 3 Eight Nos. five pin 5 Amp Electrical Sockets

Continues-3/3

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