



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 upto 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 WITH UNIVERSAL MOTOR TRAINER

NAME OF EXPERIMENTS

- | | |
|-----------------|--|
| Experiment - 1 | speed torque curve of DC shunt motor with universal motor. |
| Experiment - 2 | speed torque curve of DC series motor with universal motor. |
| Experiment - 3 | Speed torque curve of separately excited DC motor with universal motor. |
| Experiment - 4 | Speed torque of DC compound motor with universal motor. |
| Experiment - 5 | v-i efficiency curve for DC shunt generator with universal motor. |
| Experiment - 6 | v-i efficiency curve for DC series generator with universal motor. |
| Experiment - 7 | v-i efficiency curve for DC separately excited generator with universal motor. |
| Experiment - 8 | v-i efficiency curve for DC compound generator with universal motor. |
| Experiment - 9 | v-i efficiency curve for occ of shunt generator with universal motor. |
| Experiment - 10 | Speed torque curve of universal motor when operated with 180VDC. |
| Experiment - 11 | Study of efficiency of universal motor for various loading condition. |

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 DC voltmeter & Ammeter and Torque Measurement Meter.....	20306 Qty.1
04 Variable DC Power Supply.....	20307 Qty.1
05 Input Single Phase DOL Starter Panel AC DC Fix / Variable Supply.....	20308 Qty.1
06 DC Load Resistor.....	20310 Qty.1
07 AC Load Inductor.....	20311 Qty.1
08 Capacitive (C) Load.....	20312 Qty.1
09 Lamp Load.....	20313 Qty.1
10 Extension Board.....	20315 Qty.1

Motors Provided

01 DC Integrated (Trunion Mounted) Motor.....	20501 Qty.1
02 Universal Motor.....	20506 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 : $V_{arm} = 180V$ $V_{field} = 180V$

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 .



UNIVERSAL MOTOR - TYPE-20 506

Voltage : 230 VAC, 50Hz / 150VDC

Capacity -300W/4 Pole m/c, RPM - 1500, Shrouded Socket - 8

Rotor Construction : Standard commutator brush arrangement brought out on 4 terminals

Stator construction : Stator brought out on 4 terminals to facilitate AC/DC operation and direction change. Built in compensating winding to minimize AR and sparking.

Continues-2/3

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OMEGA ELECTRONICS

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**DC MOTOR COUPLED WITH
UNIVERSAL MOTOR TRAINER**
OMEGA TYPE - 20 605


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.



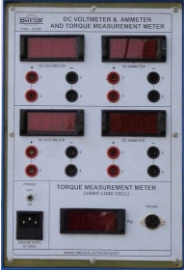
DC LOAD RESISTOR TYPE-20 310
1 750E/600E/300E/212E/162E/125E/112E/100E/400W /8 taps + OFF + separate 60E tap For DC series Gen.
2 Load Resistance switch 3 Pole 7 Way/10Amp.
3 Cooling Fan size 4" 230V Operated
4 Shrouded socket 6Nos.



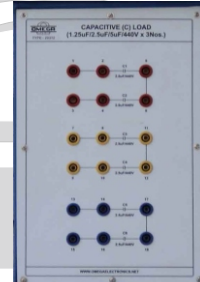
MULTIFUNCTION METER (Single Phase/ Three Phase AC 50Hz) TYPE-20 302
1 Bidirectional Multifunction Meter
2 3 Phase 4 wire, 440V, Current 5A
3 LED display,
4 Aux supply 230V, 45-65Hz, 5W
5 To measure parameters ie Voltage Current., KVA, Frequency, Power factor, Active Power (W), Reactive Power (vary) etc.
6 Shrouded socket 08Nos. etc.




AC LOAD INDUCTOR TYPE-20 311
1 Inductive load =0.15H/0.3H/0.45H/0.6H/0.75H/1.5H/3H/400mA X 3Nos.
2 Load inductor switch 3 Pole 7 Way/10Amp.
3 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.




CAPACITIVE (C) LOAD TYPE-20 312
1 Capacitive load =1.25μF /2.5mF/5mF/440VX 3Nos.
2 Shrouded socket 18Nos.




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.



LAMP LOAD TYPE-20 313
1 3 Nos. Lamp 100W with Holder & switch
2 Shrouded socket 12Nos.



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.



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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