

www.edibon.com

Products
Products range
Units
4.- Electricity

DESCRIPTION

Motor-Generator Group mounted in a painted steel structure.

Three phase generator of 24 Vac and 11A currents.

This Motor-Generator Group allows the study of the three phase alternator in both no-load and load regime.

SPECIFICATIONS

Base structure (painted steel).

Couplings.

Connectors.

EMT6/E. Permanent magnets synchronous three-phase generator (24 Vac):

Power: 450 W. Speed: 750 r.p.m. Frequency: 50 Hz. V. armature.: 3 x 24 Vac. I. Armature.: 11 A.

EMT7/E. Asynchronous three-phase motor of squirrel cage:

Power: 550 W. Speed: 750 r.p.m. Connections: Triangle/Star. Frequency: 50-60 Hz. V. Armature: 3 x 230/400 V. I. Armature nominal: 3,6-2 A.

Protections cover.

Cables and accessories, for normal operation.

Manuals: This unit is supplied with the following manuals: Required Services, Assembly and Installation, Starting-up, Safety, Maintenance & Practices Manuals.

EXERCISES AND PRACTICAL POSSIBILITIES

Some Practical Possibilities of the Unit:

- 1.- Measurements of voltage with no load, measurement of the frequency and measurement of no load losses.
- 2.- Connection to a load. Measurement of the voltage drop with load. Measurement of the power supplied.
- 3.- Behaviour of the alternator with different $\cos \phi$ loads.

REQUIRED SERVICES

-Electrical supply: three-phase, 400/230 Vac.

DIMENSIONS & WEIGHT

-Dimensions: 750 mm x 250 mm x 250 mm. approx.

-Weight: 35 Kg. approx.



ISO 9000: Quality Management
(for Design, Manufacturing,
Commercialization and After-sales service)



European Union Certificate
(total safety)



Certificates ISO 14000 and
ECO-Management and Audit Scheme
(environmental management)



Worlddidac Quality Charter
Certificate
(Worlddidac Member)

Electrical Machines Base Unit

- EME/B. **Electrical Machines Unit**

Metallic box.
 Diagram in the front panel.
 Thermal Magnetic Circuit Breaker.
 Connection terminals module:
 Connection terminals of three-phase: R, S, T and supply neutral with the corresponding signaling lamps which indicate the voltage.
 Rectification module:
 Single-phase non-controlled full-wave rectifier which provides 200 Vdc with 2 fuses with their corresponding fusion lamp.
 Operation module:
 Start/Stop push buttons (1NO+1NC).
 Connection Key. Emergency stop push button.
 Dimensions: 300 x 180 x 120 mm. approx. Weight: 5 Kg. approx.
 Required services: Electrical supply=three-phase with neutral and ground, 380V.



EME/B

Measurement Units

- EAL. **Network Analyzer Unit**

This unit shows the main electrical parameters on the electric network through the interface and an easy parameter selection.
 Metallic box. Diagram in the front panel.
 3 current inputs for series intensity.
 3 voltage terminals, for each phase measure (R, S, T) and another for the neutral connection.
 Control and visualization digital display, 3 x 3 DGT.
 Input specifications:
 Waveforms: Sinusoidal or distorted waves.
 Measurements of current, voltage, power, power factor, frequency, energy, TRMS measurement of distorted waves (voltages,currents) for each phase and average.
 Ranges:
 Voltage: V_{L-N} : 185 V to 460V.
 V_{L-L} : 320 V to 800V.
 Current: Phase current: 0.03 to 6A.
 Neutral current: 0.09 to 6A.
 Frequency: 48 to 62 Hz \pm 0.1 Hz.
 Power: Active, Reactive and Apparent.
 Power Factor: Power factor for resistive, inductive, capacitive loads type.
 Dimensions: 300 x 180 x 120 mm. approx. Weight: 3 Kg. approx.
 Required services: Power supply=220V. - 110V., single-phase + ground.



EAL

OR

- EALD. **Network Analyzer Unit, with Computer Data Acquisition.**

This unit shows the main electrical parameters on the electric network through the interface and an easy parameter selection.
 Metallic box. Diagram in the front panel.
 3 current inputs for series intensity.
 3 voltage terminals, for each phase measure (R,S,T) and another for the neutral connection.
 Control and visualization digital display.
 Ranges:
 Voltage: Range 20 - 500 Vrms. phase to phase, 290 Vrms. phase to neutral.
 Accuracy: $\pm 0.5 \pm 1$ digit.
 Current: Range 0.02 - 5 Arms. Accuracy: $\pm 0.5 \pm 1$ digit.
 Frequency: Range 40 - 500 Hz. Accuracy: $\pm 0.5\% \pm 1$ digit.
 Power: Active, Reactive and Apparent. Range 0.001 - 9990 Kva/KVAR/Kva.
 Accuracy: $\pm 1\% \pm 1$ digit.
 Power Factor: for each phase and average. Range -0.1 to + 0.1. Accuracy: $\pm 1\% \pm 1$ digit.
 Energy: Measure range 0-99999999.9 KWh (kVArh).
 Connection RS232 to computer (PC).
 Data Acquisition Software.
 Dimensions: 300 x 180 x 120 mm. approx. Weight: 3 Kg. approx.
 Required services: Power supply=220V. - 110V., single-phase + ground.



EALD

Continue...

OPTIONAL ACCESSORIES

Loads

- RCL3R. **Resistive, Inductive and Capacitive Loads Module**
Our Resistive, Capacitive and Inductive Loads Module (RCL3R) offers:
 - Single and Three-phase resistances (fixed and variable).
 - Single and Three-phase inductances.
 - Single and Three-phase capacitors.
 Metallic box. Diagram in the front panel.
 Variable resistive loads: $3 \times [150 \Omega (500 W)]$.
 Fixed resistive loads: $3 \times [150 \Omega (500 W) + 150 \Omega (500 W)]$.
 Inductive loads: $3 \times [0, 33, 78, 140, 193, 236 \text{ mH}]$. (230V / 2 A)
 Capacitive loads: $3 \times [4 \times 7 \mu\text{F}]$. (400V)
 Dimensions: 490 x 450 x 470 mm. approx. Weight: 30 Kg. approx.



RCL3R

OR

- REV/T. **Three-phase Variable Resistance:**
 $3 \times [150 \Omega (500 W)]$.



REV

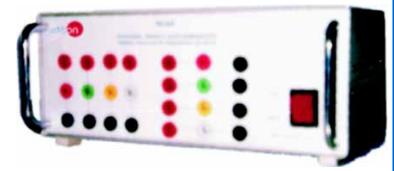
Measurement and Data Acquisition

- MUAD. **Power Data Acquisition System:**

MUAD System includes EPIB + DAB + MUAD/SOF:

1) Hardware :

- 1.1) **EPIB. Electric power interface box** (dimensions: 300 x 120 x 180 mm. approx.):
Interface that carries out the conditioning of the diverse signals that can be acquired in a process, for their later treatment and visualisation.
Front panel separated in two: left-hand part for VOLTAGE sensors, and right-hand part for CURRENT sensors.
 - 8 analog input channels.
 - 4 Tension sensors AC/DC, 400V.
 - Sampling range: 250 KSPS (Kilo samples per second).
 - 4 Current sensors.



EPIB

- 1.2) **DAB. Data acquisition board :**
PCI Data acquisition board (National Instruments) to be placed in a computer slot.
Bus PCI.

Analog input:
Number of channels= 16 single-ended or 8 differential.
Resolution= 16 bits, 1 in 65536.
Sampling rate up to: 250 KSPS (Kilo samples per second).
Input range (V)= ± 10V.
Data transfers=DMA, interrupts, programmed I/O.
Number of **DMA channels=6.**

Analog output:
Number of channels=2.
Resolution= 16 bits, 1 in 65536.
Maximum output rate up to: **833 KSPS.**
Output range(V)= ± 10.
Data transfers=DMA, interrupts, programmed I/O.
Digital Input/Output:
Number of channels=24 inputs/outputs.
DO or DI Sample Clock frequency: 0 to 1 MHz.
Timing: Counter/timers=2.
Resolution: Counter/timers: 32 bits.



DAB

- 2) **MUAD/SOF. Data acquisition software :**

Data Acquisition Software with Graphic Representation:
Amicable graphical frame.
Compatible with actual Windows operating systems.
Configurable software allowing the representation of temporal evolution of different signals.
Visualization of circuit tensions on the computer screen.
Sampling rate up to 250 KS/s (Kilo samples per second) guaranteed.

* Software is available in English and Spanish. Any other language available on request.



MUAD/SOF

* Specifications subject to change without previous notice, due to the convenience of improvements of the product.



C/ Del Agua, 14. Polígono Industrial San José de Valderas.
28918 LEGANÉS. (Madrid). SPAIN.
Phone: 34-91-6199363 FAX: 34-91-6198647
E-mail: edibon@edibon.com WEB site: www.edibon.com

Issue: ED01/11
Date: September/2011

REPRESENTATIVE:

