MOD.3000

UNIVERSAL POWER SUPPLY

INSTRUCTION MANUAL

CE

COMPANY
WITH QUALITY SYSTEM
CERTIFIED BY DNV
=ISO 9001/2000=

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EN3000MN	Rev.1-2003	Made in Italy

1.0 TRANSPORT

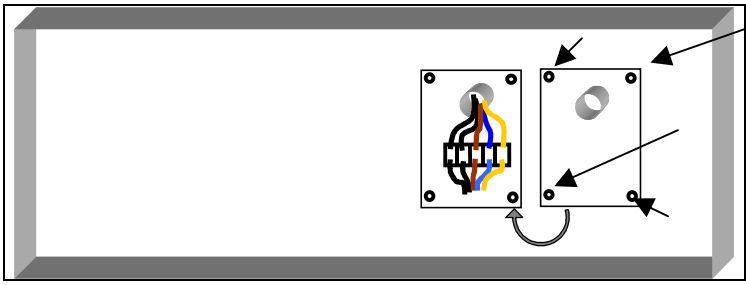
The power supply is composed by one only piece and has the following dimensions: m. 103 (L) * 31 (P) * 30 (H).
It is built-in a robust metallic steel frame, painted with epoxy varnish.
The controls and the protections are mounted on the frontal panel on which is present also the synoptic.
It is usually packed in its proper carton box
It can be hand moved and can be despatched in the carton box, only the ordinary cautions are required.

2.0 ASSEMBLY AND CONNECTION

The power module MOD.3000 does not require any assembly operation.
It is only necessary to realise the electrical connection as follow explained.

START UP PROCEDURE

Open the rear panel on right side of cover and insert the cable trough the protected hole and connect the three-phase network by means of a 5 pole safety cable 5 x 1,5 mmq (380V, 3-phase 50/60Hz + neutral + Ground (See figure below)



Unscrew these four nuts to remove the cover.

Connect the laboratory cable at the terminal board fitted inside the panel. Respect the ground and neutral.

Blue cable is neutral and yellow green is the ground
Be sure that the neutral and ground are presents.

Without neutral and ground the power supply is not correctly operating.

Without ground accident are possible.

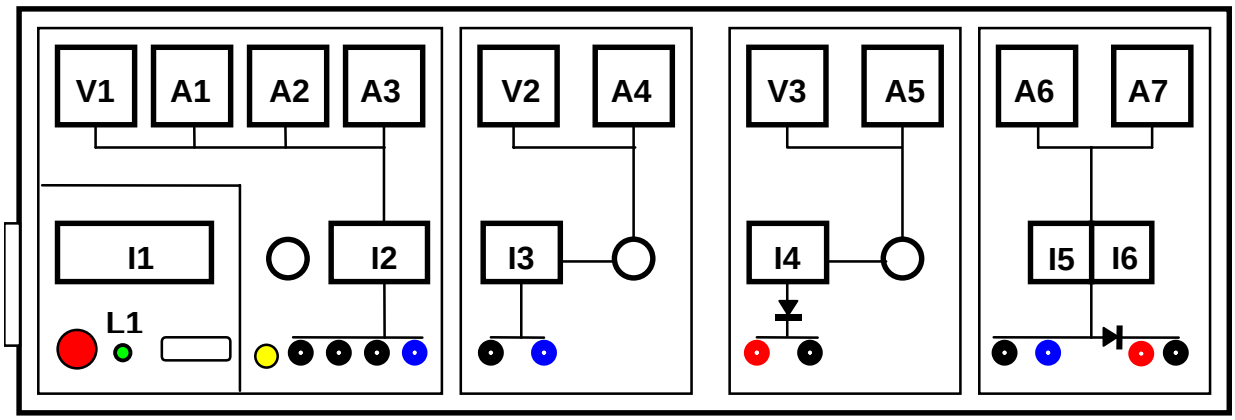
3.0 CHARACTERISTICS

- Power requirements: 220/380V, 3-phase + neutral + PE on 16A EEC socket
- Safety service single-phase socket
- Protection with high sensitivity magneto thermal differential automatic circuit breaker 0,03A
- Mushroom emergency push-button;
- Ground terminal and key consent for all outputs

Outputs sections:

Three-phase	0-430V - 1A; + N + PE with 1 voltmeter 0-500V (V1) 3 ammeters 0-5A inserted on each phase; (A1-A2-A3)
Variable single phase	0-230V - 2A with; 1 voltmeter 0-300V (V2) 1 ammeter 0-5A (A4)
D.C.	0-220V - 1,2A with; 1 voltmeter 0-300V (V3) 1 ammeter 0-5A (A5)
Fixed Outputs: Single-phase and D.C.	220V a.c. - 16A 1 ammeter 0-20A (A6) 220V d.c. - 2A 1 ammeter 0-5A (A7)

Frontal Panel



4.0 USE

4.1 RECOMMENDATION FOR SAFE AND EFFICIENT OPERATION

First of all it is important always remember that on the output terminals of the power supply is present the high voltage.

CAUTION

HIGH VOLTAGE

HANDLE THE EQUIPMENT WITH EXTREME CARE AS HIGH VOLTAGES ARE PRESENT AT SOME SOCKETS AND EXPOSED TERMINAL

When the equipment is used according the safety operation, according the indicated voltage and power and observing the indication described in the manual, it is not dangerous.
We suggest to use with extreme care this equipment.
It is important to follow the operation described in the manual; when you finish to you the equipment is has to be let in the condition in which it has to be when it will be used again.

1) Realise the connection to the ground. Be sure the first time that the ground to which you will connect has the

2) All the connection has to be made and completely finished before give voltage to the equipment.

3) No exposed conductive parts of connection must be visible after the connection

4) All connections must be terminated correctly at both ends before power is connected

5) No connections must be disconnected whilst power is still connected

6) Brushes must not be observed or adjusted whilst power is still connected

7) Coupling between the machines must be done before power is connected

8) Instructions specified in individual assignments must be adhered to.

9) Further experiments or variation must be made only after the teacher consent

4.2 TEST

Close the general switch I1.
In order to give the consent it is necessary to turn the key on ON position.
The lamp L1 is light; the current is present on the different equipment except on the 380V three-phase.
The key will return in central position automatically.
This operation has to be made each time the mushroom emergency push-button will occur.
Be sure that no connections are present at supply terminal.

Fixed outputs

- Single phase
Close the bipolar switch I5.
Measure the presence of the voltage on the terminals.
If a load is connected to the terminals it is possible to read the supplied current on the ammeter A6.
This reading corresponds to the single-phase ac current.
Open the switch I5

- D.C.
Close the three-pole switch I6.
Measure the presence of the voltage on the terminals. The output dc voltage can be 240V or more in no-load condition.
If a load is connected to the terminals it is possible to read the supplied current on the ammeter A7.
This reading corresponds to the dc current.
Open the switch I6

Single-phase variable output
Close the bipolar switch I3.
Act on the regulating knob and observe the increasing of voltmeter V2.
This reading corresponds to the single-phase variable output.
Read the current on the ammeter A4, connecting a load.
Open the bipolar switch I3

D.C. Variable output
Close the bipolar switch I4.
Act on the regulating knob and observe the increasing of voltmeter V3.
This reading corresponds to the D.C. variable output.
Read the current on the ammeter A5, connecting a load.
Open the bipolar switch I4

Three-phase variable output
Turn the key in position 3PH in order to give voltage to the terminals three-phase.
In order to cut off the three-phase voltage to the terminals turn the key in central position.

Close the three-pole switch I2
Act on the regulating knob on the side and observe the increasing of the voltmeter V1.
Verify also the voltage on L1-L2-L3.
Verify the adsorption of current by loading the section with a three-phase motor and read the values on the ammeters A1, A2 and A3

Open the three-pole switch I2.

In this way you have tested the presence of voltage on all outputs.

By acting on the Mushroom emergency push-button you will cut off the voltage from the power supply.
In order to give voltage to the power supply you have to repeat all the operation described in the chapter “TEST”

5.0 MAINTENANCE

The power supply does not required particular operation of maintenance.
We suggest in each case to realise the following intervention:

5.1 QUARTERLY CHECK

Quarterly it is important to check and in case substitute:
- Output terminals: verify possible breakage
- Mushroom emergency push-button: verify the tightening of the stem
- Key switch: verify the tightening of the metal ring

5.2 YEARLY CHECK

Verify the intervention of the circuit breaker.
In order to realise this control it is necessary to connect between a phase and the ground a decade resistance box with ohmic value 10x (1 - 10 - 100 - 1.000 -10.000 x ohm) with in series an ammeter with full-scale 100mA.
Insert a resistance of 39.990 Ω; on the ammeter you should read a value of approx. 0,01A.

Slowly decrease the resistance acting on the decade x1000.
Some circuit breaker will occur starting from 0,012, and 0,015A;
Usually the intervention will take place between 0,018 and 0,025A.
In case the intervention will take place at 0,03A or more, substitute immediately the differential section of the four-pole switch.

5.3 SPARE PARTS

In order to be able to meet some breakage, we suggest to keep the following materials:

- Black safety sockets 5
- Red safety sockets 2
- Yellow safety sockets 1
- Four-pole magneto-thermal circuit breaker 1

List of components

AMP72 5A CA	Amperometro 72x72 5A CA
AMP72 5A CC	Amperometro 72x72 5A CC
AMP72 20A CA	Amperometro 72x72 20A CA
CE590530	HA62 INT AUT MGT 2P C03 6KA
CE590531	HA62 INT AUT MGT 2P C04 6KA
CE590534	HA63 INT AUT MGT 3P C04 6KA
CE591216	DM44 INTDIF MAG 3P+N C16A 0,03
IT BOCC 30A BLU	Boccola di sicurezza 30A blu
IT BOCC 30A GIA	Boccola di sicurezza 30A giall
IT BOCC 30A NER	Boccola di sicurezza 30A nera
IT BOCC 30A ROS	Boccola di sicurezza 30A rossa
LAMP VER 220V	Lamp spia verde 220V
LG 39420	Pettine equipotenz (10 denti)
LV 11BF9 40 220	Cntatt 4P com CA 220V 20A 4NO
LV 8LM2TC01 NC	Contatto NC ROSSO
LV 8LM2TC10 NA	Contatto NA VERDE
LV 8LM2TS360	Selet chia 1-0-2 autorit da 2
LV 8LP2TB6144	Fungo emerg instabile D.40
MI 43400	MORS 4MMQ X GUIDA OMEGA
MI 43454	MORS TERRA 4MMQ X OMEGA
MK 496032456	Ponte rad 1F 24A 600V KBPC2506
MK496032446	Ponte RAD 1F 10A 600V KBPC1006
SPH HSG 0052	Var 1F 220/0-250V 2,5A 600VA
SPH HTG 450-2,5	Var 3F 400/0-450V 2,5A 1950VA N
SPH MAN 45-6	Manop grigia D. 45 x alb. 6mm N
SPH MAN 45-8	Manop grigia D. 45 x alb. 8mm
SPH QUADR VAR	Quadrante 0-100% diam. 84mm
TC 5180	Presa bipasso alv prot MAGIC
TC 5367R	Supporto in resina 1 frutto
TR 35-00700-01	Auto 3F 380/175V 700VA
VOL72 300V CA	Voltmetro 72x72 300V CA
VOL72 300V CC	Voltmetro 72x72 300C CC
VOL72 500V CA	Voltmetro 72x72 500V CA

6.0 CLEANING

Usually the power supply does not require particular cleaning operation.
Never use alcohol or solvent to clean the desk

7.0 BLOCK DIAGRAM