POWER SUPPLY TUL 133

Installation Manual

FUNCTIONAL FEATURES

The power supply unit is composed by a linear feeder, with function of limitation of constant current, an analogic control circuit and a microcontroller supervision circuit.
The power supply is divided into 3 terminal outputs protected by the relative fuses.

- BAT : where buffer battery will be connected
- OUT 1 , OUT 2 , : for generic loads

Battery is charged with constant current (13,8 V @ 25° C) with environmental temperature compensation and limitation of current.
Maximum current supplied by feeder is 3 A (2 A for load and 1 A for battery).
LED in control card are close to respective fuses (see picture n. 1) to indicate:

- Interrupted fuse for each output (DL2 , DL8 , DL3)
- Power absorbed by load (2 green and one red , DL7 , DL6 , DL5)
- Tension presence (RETE)

A microcontroller system, checks all possible anomalies, providing a FAILURE signal in the following situations:

1. Output fuses interrupted
2. Disconnetted battery
3. Low battery tension (<11 V)
4. No battery charge
5. Over tension to output (> 14,5 V)

Both Failure and Power absence signals are located in a connector on the supervision and control card.
A protection circuit realized with a fuse and a SRC, against overload tensions, has been inserted to avoid that a failure of regulation series could damage loads or battery. There's also a fuse for alternated feeding.
In case of a power supply failure or power absence, feeding for logic and control circuits is provided by battery.

ELECTRICAL FEATURES

- Feeding tension : 230 Vac +10% / -15% Frequency : 50 Hz
- Output tension : 13,8 Vdc (-15% / +10%)
- Minimum output tension: 11 Vdc (in absence of voltage and with exhausted battery)
- Max output current: 3 A max.
- Adjustment on full charge power variations (+10% / -15%) : best than 1 %
- Adjustment on load variations (0 to 100%) : best than 1%
- Residual ripple on full load: 30mVpp (a 230 Vac)
- Fuses : [battery:T 4 AL] [OUT 1 , OUT 2 :T 2 AL:] [AC Power supply :T 1,6 AL]
  [Overtension: T 4 AL]

Compensation of output tension according to temperature: 4 mV/ K
Protection against battery polarity inversion: diodes

MECHANICAL FEATURES

Dimensions (mm) : width 280 ; height 373 ; depth 125 Weigth : 6,2 Kg

ENVIRONMENTAL FEATURES

Operating temperature: from -5 °C to +40 °C
Relative humidity: from 5% to 93% ±2 %
Cooling: air cooling
Installation place: sheltered from atmospheric agents

SECURITY INSTRUCTION

1. Utilize different fairlead holes on the bottom of the box, to pass cables for tension input and dc output + alarms. Moreover, materials for pipe/box fitting must have HB inflammability class or better.
2. "GUASTO" and "RETE RIT" relay contacts, must be connected only to circuits working with SELV tension.
3. For AC power supply, use a differential magneto-termic bipolar protection switch, easily accessible.
4. Conductors must have cross section suitable to tension and equipped with adequate cable terminals on contact pressure points.
5. Installation of unit must be executed by qualified personnel who Know security requirements EN60950 and concerning power supply units CEI 64-8.

INSTALLATION

Mechanical mounting

This unit has to be installed on vertical solid walls able to support the power supply unit using 4 plugs of 6 mm, 4 washers and screws coming out from the 4 holes on the bottom of the box.

Electrical connection

Connect unit to power 230 Vac through a differential magneto-termic bipolar switch to protect line against short circuit and operator from current leakage.

IMPORTANT: Utilize separated fairlead and tubes for input ac power supply (230 Vac) and dc outputs + alarms (SELV).
For connection please refer to Pict 1. In this picture are indicated the following important topics:

Output terminals (Power supply)

BAT +	Battery positive pole
BAT -	Battery negative pole
OUT 1 +	Positive output to load 1
OUT 1 -	Negative output to load 1
OUT 2 +	Positive output to load 2
OUT 2 -	Negative output to load 2

Fuses

F1	Input fuse power supply 230 Vac (T 1,6 AL)
F2	Fuse for over tension protection (T 4 AL)
F3	Battery fuse (T 4 AL)
F4	Relative output fuse OUT 1 (T 2 AL)
F5	Relative output fuse OUT 2 (T 2 AL)

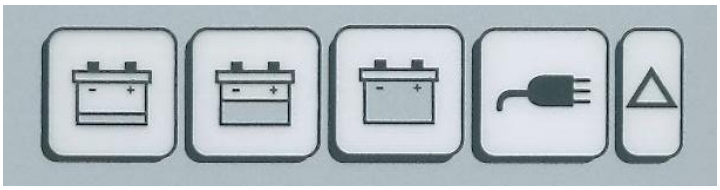
ALTERNING POWER SUPPLY TERMINALS

L line connection (230 Vac) ⏚ land protection connection **N** neutral connection

Check and adjustments

P1 e P2 check are calibrated from factory and **must not be modified by operators**. Tampering of these checks will cause guarantee loss.

FRONT PANEL SIGNALS



Low battery | Battery OK | Overcharged battery | Mains | Failure

- **Low Battery:** - check tension lower than 11 V
- **Battery OK:** - tension between 11 V and 14,5 V
- **Overloaded Battery:** - tension higher than 14,5 V
- **Power Supply:** - line tension 230 Vac
- **Failure:** - General failure pilot lamp: light up in case of:
  Low battery – Overloaded battery – Tension absence 230 Vac –
  Fuse failure – Disconnected battery – Battery charge loss

Control circuit connection (placed behind frontal panel)

See Pict. 2

"Tension absence" Relay – Terminals 10 – 11 – 12 (working with SELV tension)

Output relay for tension absence with programmable delays of activation:

Jumper on **JP1** to get a 15 seconds delay
Jumper on **J1** to get a 15 minutes delay
Jumper on **J2** to get a 60 minutes delay
Jumper on **J3** to get a 120 minutes delay
Jumper on **J4** to get a 240 minutes delay

NOTE*: **Without any jumper connected, the "Tension absence " relay will be never activated.***

Failure signaling" relays – Terminals 4 – 5 – 6 (working with SELV tension)

Output relay for failure signaling, activated in case of:
Low Battery (tension lower than 11 V)
Overloaded Battery (tension higher than 14,5 V)

MAINTENANCE

In order to avoid power supply unit malfunctions, periodic and preventive maintenance must be executed by qualified staff. Maintenance is recommended each 6 months. During all check operations, there is the possibility of alarms, so coordination with control central is suggested.

- Check connection status of power supply line 230 Vac.
- Check connection status of alarm lines and relative screening.
- Check connections to battery. They must be not oxidized and well fastened.
- Check output tension on load (see Electrical Specifications)

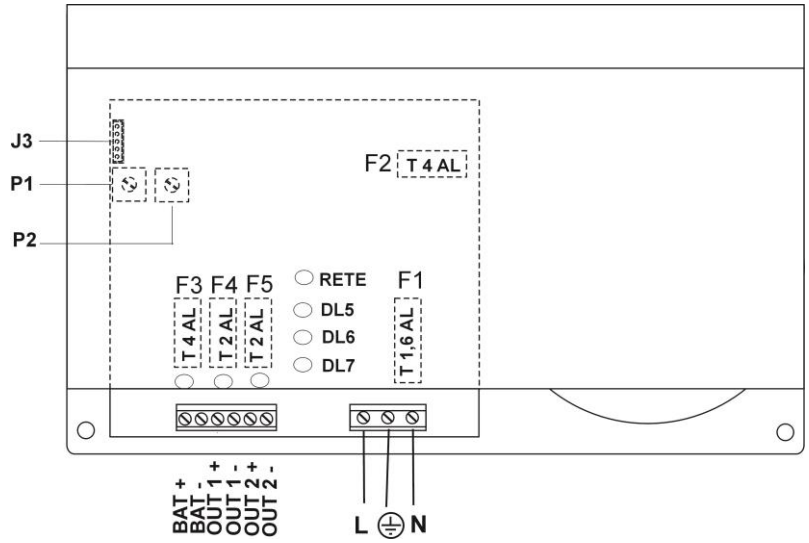
Even if Power supply unit has a self-diagnostic system, to check periodically battery and its anomalies, a manual check of battery each 6 months is anyway suggested.

- Disconnect battery and check if battery charger tension is within indicated values.
- During tests, check the presence of respective alarms.

MANUFACTURER DECLARATIONS

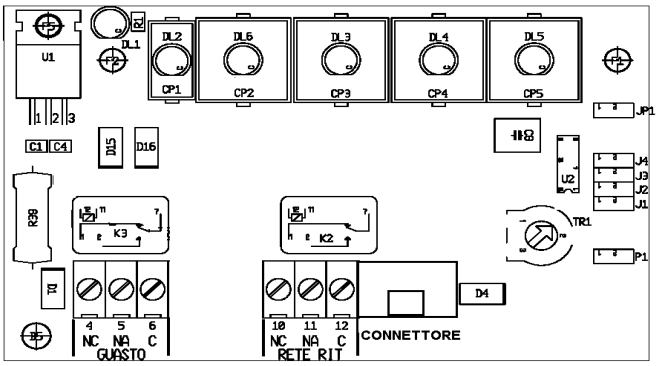
We declare that:

- Project has been developed by our internal management system of quality control respecting all rules required for a suitable planning.
- All components are selected for expected purpose and their characteristics are guaranteed if environmental conditions outside coverings correspond to those specified in IEC 721 3-3 requirement class 3K5.



DL7 I > 0,2 A
DL6 I > 1,4 A
DL5 I > 3 A
DL5 Flashing I > 3,5 A

PICT. 1



PICT. 2

WASTING:
This product must be wasted in appropriate wheelie-bin for electric and electronic materials.
Do not put in weelie-bin for other kind of waste.

CE
MADE IN ITALY