



TX/Communications Canada Inc.

5 to100 Amperes Linear Power Supply/Charger
(120 Volt 60Hz)
(220 Volt 50Hz)

Products Options

120 volt 60Hz AC input, 54 volt 5 to 100 Amp output Linear Charger:
220/240 volt 50/60Hz AC input, 54 volt 5 to 100 Amp output Linear
Charger:

Other input voltages available on request.

Specifications

The linear power supply /AC input with an isolation transformer powers charger. The output amperes and voltages are designed according to customer requirements. At the present time, the range is from 5 to 100 amperes DC, 54 volt regulated DC linear power supply. The linear charger provides power to a variety of telecom systems and charging batteries at the same time. It maintains the batteries at a fully charged state.

Other out put voltages available on request.

Features of the Linear Chargers

1. Constant current and constant voltage mode linear charger.
2. AC input transformer isolation.
3. 54 volts DC voltage regulated output with current limited at rated ampere at the time order.
4. Over-voltage protection over 56 volts to prevent equipment damage.
5. Under-voltage for batteries cut off from the load at 42 volts to avoid batteries energy over-drain.
6. AC power supply monitoring for time delay to the load circuit during AC power failure. This prevents damage from a power surge and allows the supply to stabilize before DC power delivery to the load.
7. Charger AC failure alarm relay.
8. Battery LOW warning at 44 volts or less.
9. Battery terminal reverse protection.
10. Temperature sensors including one sensor for transformer, two sensors for power transistor and 24 external sensors for batteries.
11. Two or more chargers can be connected in parallel for power sharing.

12. 40 characters X 4 LCD display for operation and Volt/AMP status, messages, and faceplate LED indicators.
13. CPU controller with RS232 interface, internal modem and 10BasetT Ethernet interface for remote monitoring and control (specification and features refer to document TX32-55-01).
14. One external input sensor (external passive contact switch).
15. Two relays for external control (NC or NO selectable) for general application, such as charger failure indicator and generator remote starter control.
16. All the features are programmable via the CPU controller.
17. Additional features are standard in the charger assembly; the information is referred to the CPU controller assembly (10BASET-CONSOLE.DOC)

Specifications of the Regulator

Output voltage regulation: 0.5% max.

Output ripple voltage: 0.003% typical.

Sensing Circuits and Circuits cut off Relays

The battery charger provides AC supply monitoring, charger under voltage monitoring, battery under voltage monitoring, charger over voltage monitoring, power transistor temperature sensors, power transformer temperature sensor, and optional battery temperature sensors. The sensing circuits feed the signal to the CPU controller and determine the status of the load relays. There are two sections of monitoring and control circuits; one part is located on the Regulator PCB whose functions are default to automatic sensing control. The operation status is monitored by the CPU controller. The control function can be altered, overrode, enabled and disabled by the CPU.

AC Supply Monitoring

The AC supply is monitored by the CPLD circuitry. The AC voltage of 6.5 volt is detected by zero crossing detector circuitry. When AC voltage is present, the positive half of the sine wave is fed into the input of the control circuit to sample if the AC supply is present.

The AC supply monitor and control provide several functions, including activation of the AC fail alarm relay, power on sequence to avoid high

current surge, and time delay of power delivery to the loads when the AC power returns after failure, thus preventing the power supply source from oscillating.

During AC supply failure, the AC supply relay is "OFF" and the battery supplies current to the load. At this time, if AC power returns, the AC supply relay will not be turned on until 15 seconds later. This ensures that the power supply source is stable and steady. Often during AC supply failure, the power supply can return and be gone again within a short period of time.

Charger Voltage and Current Output

The charger output voltage and current is monitored by the monitoring circuitry and the current level and voltage level are displayed on a 4x40 LCD.

The CPU controller monitors the load voltage condition when the charger is operating on battery only (AC supply is OFF). When the value of the out put voltage drops below 42 volts, the battery will be disconnected from the load. This protects the battery from over draining its internal energy which would cause the electrodes to be sulfated thus damaging the battery. The relay will be turned "ON" automatically after the AC supply returns back to normal condition.

Heat Temperature Sensor

The temperature of the power supply/charger is monitored to avoid the temperature rising above 100°C. Temperature sensing circuitry sends the data to the CPU controller. The CPU controller turns the AC supply relay "OFF" thus turning off the charger. The relay will not be turned "ON" automatically during this faulty condition.

Transformer Temperature Sensor

The temperature of the power transformer is monitored to avoid the temperature rising above 125°C. When the temperature reaches the critical value, the controller turns the AC supply relay "OFF" thus turning off the charger. The relay will not be turned "ON" automatically.

Batteries Temperature Sensor

There are 24 optional battery sensors. The temperature of the batteries is monitored to avoid the temperature rising above 70°C. When the temperature reaches the critical value, the CPU controller turns the battery relay "OFF" thus disconnecting the battery from the load and charger. Usually the battery is over charged or defective if these conditions occur. The relay will not be turned "ON" automatically.