2. SPECIFICATIONS

2-1 General

Main supply — 100V/120V/220V/240V ± 10 % 50/60 Hz (Switch selectable)

Rating, dimension and weight — see Table 2-1.

Table 2-1

MODEL	Max. Rating		Dimensions	Weight
	Volts (V)	Amps (A)	WxHxD (m/m)	Kg
GPR-30H10	300	1	225 (W) 145 (H) 420 (D)	13.5
GPR-11H30	110	3		13.5
GPR-7550	75	5		18.5
GPR-6060	60	6		18.5
GPR-3510H	35	10		18.5
GPR-1820H	18	20		18.5
GPR-0830H	8	30		18.5

(NOTE: All model with digital display available.)

Operation mode — **Series Operation**

Operation Temperature & Humidity — 0°C to 40°C, <80%

Storage Temperature & Humidity — −10°C to 70°C, <70%

Accessories — Test Lead GTL-105 (current <4A) x1
or GTL-104 (4≤current≤10A)
Notes: Current > 10A without Test Lead.
Operation Manual x1

2-2 Constant Voltage Operation

(1) Output voltage ranges 0 to rating voltage continuously adjustable.

(2) Voltage regulation
line regulation≤0.01%+3mV
load regulation ≤0.01%+5mV
load regulation≤0.02%+5mV (≥10A)

(3) Recovery time≤100μs (50% Load change, Minimum load 0.5A)

(4) Ripple & Noise ≤ 1mV rms (5Hz~1MHz)

(5) Temperature coefficient ≤300PPM/°C

2-3 Constant Current Operation

(1) Output current range 0 to rating current continuously adjustable.

(2) Current regulation
line regulation ≤ 0.2%+3mA
load regulation ≤0.2%+5mA

(3) Ripple current≤5mA rms. (≤20A), ≤10mA rms (≤30A).
≤20mA rms (≤50A)

2-4 Indicator Meter

(1) Digital Type
Display: 3½ Digits 0.5" Red LED Display.
Accuracy: ±(0.5% of rdg + 2 digits)
Voltage range: 19.99V of full scale (rating voltage ≤18V).
199.9V of full scale (rating voltage ≤180V).
1999V of full scale (rating voltage ≤1800V)
Current range: 1.999A of full scale (rating current ≤1.8A)
19.99A of full scale (rating current ≤18A)
199.9A of full scale (rating current ≤180A).

(2) Analog Type
Meter: Voltmeter and Ammeter each one
Class: 2.5
Dimensions: 60x80 m/m

2-5 Insulation

Between chassis and output terminal

100MΩ or above (DC 1000V)

Between chassis and AC cord

100MΩ or above (DC 1000V)

3. THEORY OF OPERATION

3-1 Low Voltage Circuit (FIG. 1)

The power supply consists of an AC input circuit and transformer, a bias supply consisting of a rectifier and filter and reference voltage source, a main regulator circuit consisting of the main rectifier and filter, a series regulator, a current comparator, a voltage comparator, a reference voltage amplifier, tag a instant over load protection circuit and a relay control circuit.

The circuit element are several of integrated circuit (U201, U202, U203, U204, U101, U205).

The circuit is discussed with reference to the block diagram Function Description.

Single phase input power is applied to transformer through the input circuit.

Auxiliary rectifier D101-D104 provides a bias voltage filtered by capacitor C101, C102 for the preregulator U101, Q101, Q102, that provides a regulator voltage for element of action.

The main rectifier, a full wave bridge rectifier, provides the power which is filtered by capacitor C401~C404 and then regulated via a series regulator and deliver to the output.

U204 provides a reference voltage for U205, U205 acted as a current limter. When current is over predominate rating, it acted and decreased the current. U201 provides a reference voltage for U202, U202 is a invertor amplifier, U205 is a comparator amplifier. It's many be made comparator for reference voltage and detector feeoback voltage, and then deliver toQ203 this time output voltage is calibrated.

Q201 is instant over load protection circuit Q201 turn on when voice response load adds at instant. It controls Q203 current magnitude of I_B makes output current limited.

The relay control circuit provides limited power dissipation in series regulator.