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1. SAFETY TERMS AND SYMBOLS

These terms may appear in this manual or on the product:



WARNING: Warning statements identify condition or practices that could result in injury or loss of life.



Caution: Caution statements identify conditions or practices that could result in damage to this product or other property.

The following symbol may appear in this manual or on the product:

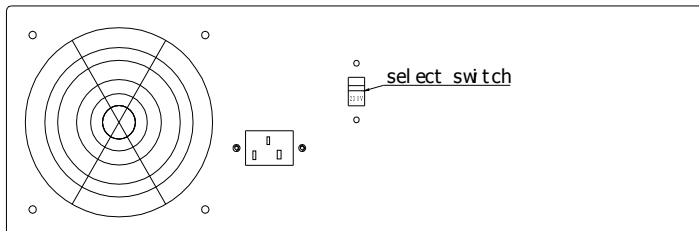


Attention refer to Manual.

2. INSTALLATION

- 1) Before installation, please make sure the AC input voltage is correct.

The AC input voltage of 72-7675 is either 115V or 230V, which can be selected. The select switch is located on the rear panel.



- 2) Before connecting the power cord to the suitable outlet, please make sure all the 72-7675's breakers are turned off. It will avoid the unnecessary accident or damage to the unit.
- 3) Plug the input power cord to the suitable outlet.
- 4) Please make sure the input tolerance is within $\pm 10\%$ of rated voltage (see figure 1).

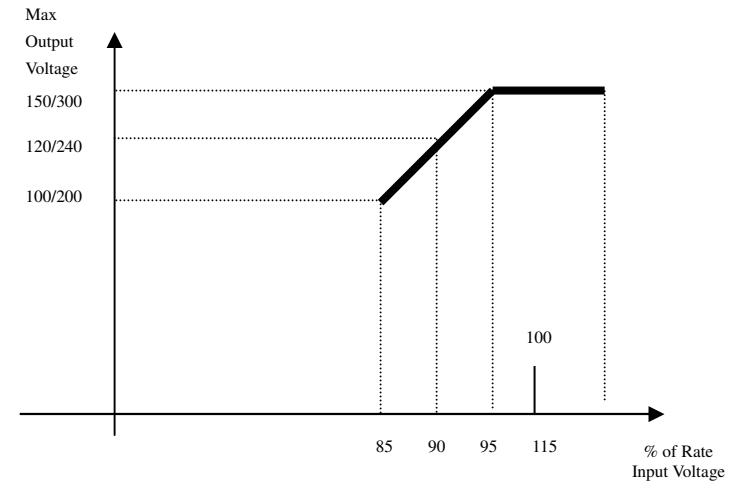


Figure 1

5) The size of input wire and output wire.

Model	Input Wire Size		Output Wire Size
	115V	230V	
72-7675	AWG#14	0.75mm ²	AWG#18

6) An AC power cord is included with the unit.

7) The Selection of Output Test Lead:

For safety assurance, please select the adequate output test lead according to the following list:

UL (CSA) Model	Conductor				Maximum Conductive Resistor Ω/km	Permissible Current A(amp)
	Wire No. AWG	Component pc/mm	Cross Section Area (mm) ²	Outer Diameter mm		
1015 TEW (Twisted Wire)	24	11/0.16	0.22	0.64	88.6	7.64
	22	17/0.16	0.34	0.78	62.5	10.0
	20	21/0.18	0.53	0.95	39.5	13.1
	18	34/0.18	0.87	1.21	24.4	17.2
	16	26/0.254	1.32	1.53	15.6	22.6
	14	41/0.254	2.08	2.03	9.90	30.4
	12	65/0.254	3.29	2.35	6.24	40.6
	10	65/0.32	5.23	3.00	3.90	55.3

Remark:

- a) The ambient temperature of “Permissible Current” is at 40°C, the withstanding temperature of conductor is at 105°C according to the condition of the distributed single wire.
- b) The permissible current listed as above is suggested to be used under 70%.
- c) When the current value exceeds above suggestive list, can select more wires used in parallel according to above list.

3. OPERATION

Voltage Setting:

Voltage setting contents “110V”, “220V”, “▲” and “▼” four keys.

- a. When any one of the keys mentioned above is pressed, the voltage display will flash one time, the unit will go to the setting mode and show the voltage setting value.
- b. If the “110V” Key is pressed, the output voltage will be adjusted to 110V immediately. Meanwhile, the voltage display will switch back to the reading mode automatically.
- c. If the “220V” key is pressed for 0.2 seconds continuously (for safety reason, must be), the output voltage will be adjusted to 220V. Meanwhile, the voltage display will switch back to the reading mode automatically.

Note: It will not work if the output voltage is setting on low range (0~150V output)

- d. If either “▲” or “▼” key is pressed for 0.5 seconds, the output voltage will be adjusted. If either “▲” or “▼” is pressed twice, the output voltage will be adjusted immediately.
- e. The adjusting rates are 0.1V/step on fine adjust mode and 1V/step on coarse adjust mode.
- f. The first six steps of adjustment will be spent 0.25 seconds per step. If the key “▲” or “▼” is pressed continuously, it will spend 0.13 second per step for the rest steps. If the key is released, the voltage adjustment would be stopped and go back to the original adjustment speed (0.25 seconds per step) automatically.
- g. If the output mode is setting ON (the indicator “OUTPUT” would light), the output voltage could follow the setting voltage simultaneously.



Caution: If there is no function test of voltage “▲” or “▼”, the voltage output mode would be suggested to switch to “OFF” status for avoiding unnecessary mistakes occurring.

- h. If any key mentioned above is not pressed for 2 seconds continuously, the unit will go back to the normal operation and the voltage display could show the reading value automatically.

Frequency Setting:

Frequency setting contents “50Hz”, “60Hz”, “▲” and “▼” four keys.

- a. If the key “50Hz” or the key “60Hz” is pressed, the frequency will be changed immediately to 50Hz, 60Hz respectively. Meanwhile the output frequency will be changed coincidentally.
- b. The frequency ranges from 45Hz to 99.9Hz can be adjusted by 0.1 Hz per step in fine adjustment mode and 1 Hz per step in coarse adjustment mode. The frequency ranges from 100Hz to 500Hz can be adjusted by 1 Hz per step in fine adjustment and 10Hz per second in coarse adjustment mode.
- c. The other settings are the same as voltage setting.

High / Low Voltage range selection:

Press the key of “RANGE”, if the indicator lights, the output voltage would be setting on the high voltage range, otherwise, the system would be setting on low voltage range. The changed range would not cause the setting voltage to change, however, there is a 20ms interruption during the voltage range changing. The non-reasonable range changing (For example, the voltage sets 200V but the range is changed to the low range) is not acceptable

this unit.

Note: High range voltage 0 ~ 300V

Low range voltage 0 ~ 150V

Instrumentation selection:

- a. Pressing the “A” key will light the current indicator and the LED display will show the value of current.
- b. Pressing the “W” will light the power indicator and the LED display will show the value of wattage.
- c. Pressing the “PF” key will light the power factor indicator and the LED display will show the value of power factor.

Output Enabled and Disabled Operation:

Press the key of “OUTPUT”. If the output indicator lights, the output is enabled, and the LED display will show the output value (reading value). Otherwise, the output function is disabled, and the LED display will show the setting value. Press the “OUTPUT” key again to change the mode.

Lock Function:

Press the key of “LOCK”, if the lock indicator lights, all the keys are Locked (except the alarm reset). This function is good for avoiding any mistakes of key pressed during operation. Press again to change the mode.

Alarm Reset:

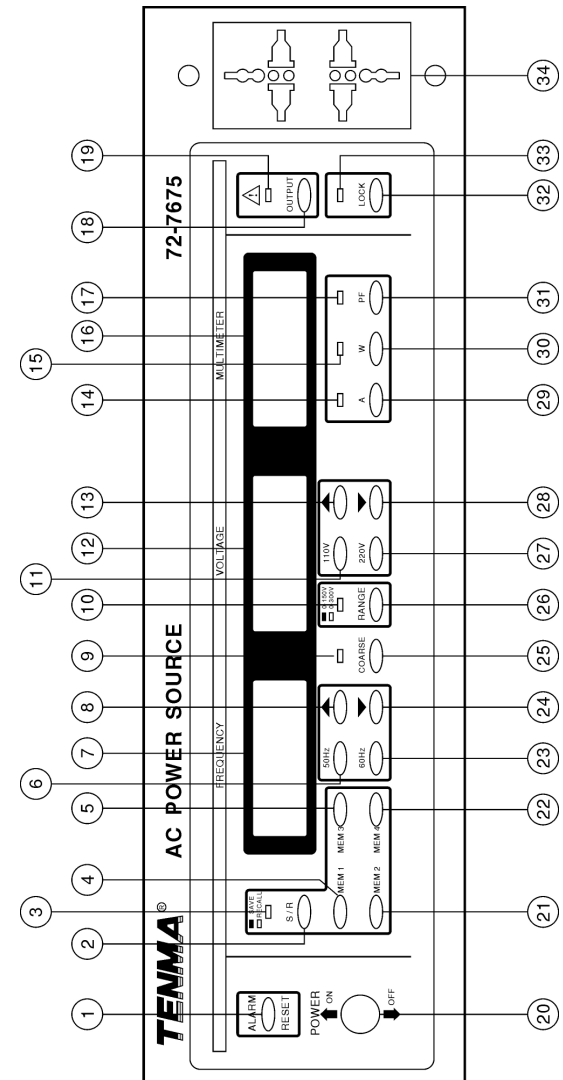
If an over current event occurs, the 72-7675 will shut down and buzz immediately. You must press “ALARM RESET” to clear. In addition, the “OUTPUT” key must be pressed to return to normal output voltage.

Memory Function:

The 72-7675 is equipped with EEPROM, the latest setting will be memorized after the unit is turned off. When the unit is turned on again, the latest setting will be displayed.

Save/Recall Function:

Press the key of “S/R”, if the indicator of SAVE/RECALL doesn’t light. Press any one of “MEM1”, “MEM2”, “MEM3” and “MEM4” keys for 0.2 seconds, the current output setting will be saved. If the indicator of SAVE/RECALL lights, press any one of “MEM1”, “MEM2”, “MEM3” and “MEM4” keys for 0.2 seconds, the setting saved last time by the same key will be recalled as current setting.



4. PANEL DESCRIPTION

- (1) “ALARM RESET” Key
Reset key to cease the buzz and reset the output.
- (2) “S/R” Key
Save or Recall function selecting key.
- (3) “SAVE/RECALL” Indicator
In the mode to save setting, the indicator doesn’t light. In the mode to recall setting, the indicator lights.
- (4), (5), (21), (22) “MEM1”, “MEM2”, “MEM3” and “MEM4” Keys
When the “SAVE/RECALL” indicator is off, the four keys are for saving four different settings. When the indicator is on, the keys are for recalling the saved settings.
- (6), (23) “50Hz” and “60Hz” Keys
One touch key for 50Hz and 60Hz output respectively.
- (7) Output Frequency LED Display:
If the ‘OUTPUT’ key isn’t pressed, the indicator doesn’t light, and the setting frequency value will be displayed on the output frequency LED display. If the ‘OUTPUT’ key is pressed, the indicator light, and the output frequency value will be displayed on the output frequency LED display.
- (8), (24) “▲” and “▼” Keys
The two keys are for frequency setting, to increase or decrease the frequency value respectively every time they are pressed. The adjusting rate depends on the ‘COARSE’ key and the frequency value itself.
- (9) Coarse Indicator
If the coarse adjustment mode is selected, the coarse indicator will light. If the fine adjustment mode is selected, the coarse indicator does not light.

- (10) High/Low Range Indicator of Output Voltage
If this indicator lights, the output voltage is in the range 0~300V.
If this Indicator does not light, the output voltage is in the range 0~150V.
- (11), (27) “110V” and “220V” Keys
One touch key for 220V and 110V output respectively.
- (12) Output Voltage LED Display
If the “OUTPUT” Key is not pressed, the indicator doesn’t light, and the setting value will be displayed on the Output Voltage LED Display. If the “OUTPUT” key is pressed, the indicator lights, and the output value will be displayed on the Output Voltage LED Display.
- (13), (28) “▲” and “▼” Keys
The two keys are for voltage setting, to increase or decrease the voltage value respectively every time they are pressed. The adjusting rate depends on the “COARSE” key.
- (14) Function of Ammeter Indicator
If ammeter’s indicator lights, the value of output current will be displayed on the multimeter LED display.
- (15) Function of Wattage Meter Indicator
If wattage meter’s indicator lights, the value of output wattage will be displayed on the multimeter LED display.
- (16) Multimeter LED Display
The value of output current, wattage or power factor will be displayed by respective key from “A”, “W”, to ‘PF’.
- (17) Function of Power Factor Meter Indicator
If power factor meter’s indicator lights, the value of output power factor will be displayed on the multimeter LED display.
- (18) “OUTPUT” Key
Output function enabled/disabled selection key.

(19) Output Indicator

When output is enabled, the output indicator will light.

(20) Power Switch

To turn on /off 72-7675.

(25) "COARSE" Key

Coarse/Fine adjustment selection key.

(26) "RANGE" Key

For the high/low output voltage's range selection.

(29) "A" Key

Ammeter selection key of multimeter LED display

(30) "W" Key

Wattage meter selection key of multimeter LED display.

(31) "PF" Key

Power factor meter selection key of multimeter LED display.

(32) "LOCK" Key

Lock/Unlock keyboard selection key.

(33) Lock Indicator

The lock indicator lights to indicate the keyboard is locked. All other keys except 'RESET' are disabled.

(34) Outlet

Output socket



Caution: The maximum AC voltage is up to 300V. Do not touch the output sockets when the OUTPUT indicator appears lit.

5. CIRCUIT PRINCIPLE

This power supply is controlled by CPU and operated via keyboard. The unit is fully digital controlled.

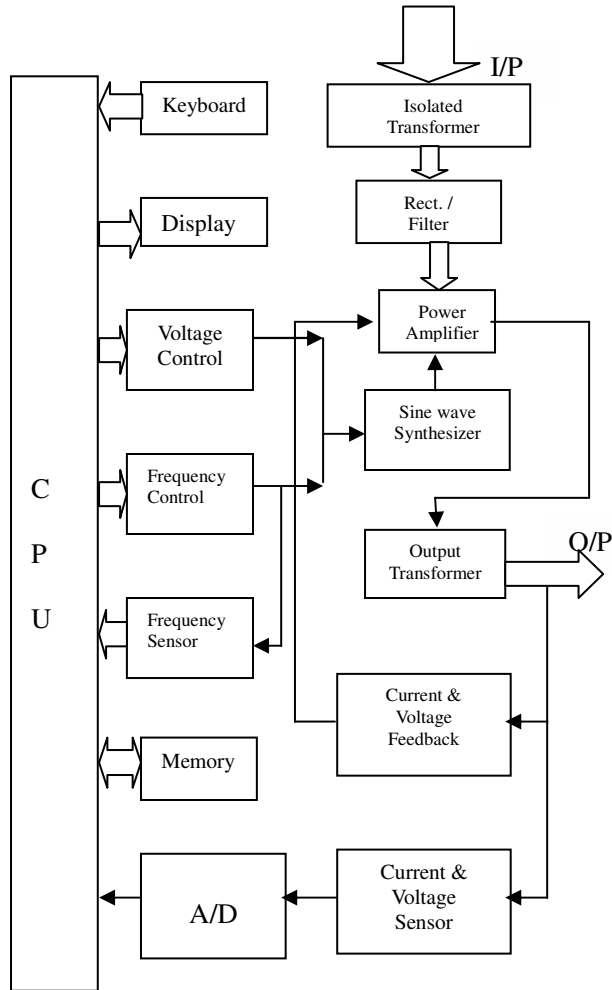
The input isolation transformer has been applied to isolate the city power and step down the input voltage for appropriate applications. The main AC power is rectified and filtered to become a very smooth DC source for power amplifier. Sine wave form is generated by the digital synthesizer and filtered by a very high impedance filter. Therefore, the sine wave form will be very stable and the distortion will be reduced.

The unit has two voltage feedback systems. One is analog feedback system for quick response (within 100us), and the regulation will be located in the range of $\pm 5\%$. The other is digital feedback system. The system will read the output voltage and compare with the settings. The accuracy of Output voltage will be limited in the range of $\pm 0.1V$.

The sine wave signal is amplified by power amplifier. The power amplifier provides a very clean and low distortion sine wave to the output of APS series through the output transformer. The offset and calibration data of instrumentation are stored in the EEPROM. The instrumentation will be calibrated automatically when the unit is switched on. True RMS circuit is applied for the voltmeter and ammeter. The value of LED display is true RMS value.

For easy operation, the power supply has a EEPROM memory. The EEPROM will memorize the latest data settings automatically after the unit has been switched off. When the unit is switched on again, the CPU will read the data from the EEPROM and provide the same output value as the previous setting. It is unnecessary to reset the data after the unit has been turned off.

6. BLOCK DIAGRAM



7. SPECIFICATIONS

Specification	Description
Output Frequency (45.0~500Hz)	Digital setting via keys, Resolution: 0.1Hz Accuracy: ±0.1Hz
Output Voltage (AC0.0~300.0V)	Digital setting via keys, Resolution: 0.1Vrms Accuracy: ±1%rdg+1digit AC40.1~ 300.0V) Resolution: 0.1Vrms Accuracy: ±1%rdg+5digitAC0.0~ 40.0V)
Output Capacity	Low voltage range: 0.0 ~ 150Vac High voltage range: 0.0 ~ 300Vac
Output Power	500VA(72-7675);
Maximum Current	72-7675: 4.2A(0~150V), 2.1A(0~300V)
Line Voltage Regulation	±0.1%
Load Regulation	±(0.5%+0.1V)
Protection	Key Lock, OCP, Short Circuit Protect OTP
Frequency Stability	≅ 100ppm
Wave Distortion	0-150V 22V~125V ≤ 0.5%THD.(Resistance Load) 0-300V 44V~280V ≤ 0.5%THD.(Resistance Load)
Digital Display:	
Frequency Counter	Measuring Range: 0.0~999Hz Resolution: 0.1Hz Accuracy: ±0.1Hz
RMS Voltmeter	Measuring Range: AC0.0 ~ 380V Resolution: 0.1Vrms Accuracy: ±1% Rdg+1Digit
RMS Ammeter	Measuring Range: 0.000~2.000A 1.80~35.00A Resolution: 1mA(<360w) 0.01A Accuracy: ±1% rdg ±1% rdg +5 digits +2 digits

Specification	Description
Wattage Meter	Measuring Range: 0.0~360W(<2A) 320~3500W Resolution: 0.1W 1W Accuracy: ±1.5% rdg+5digits ±1.5% rdg+20digits(≤0.3A)
Line Input Requirement	115/230Vac±10%, 47-63Hz, 1 phase
Calibration	Front Panel Software Calibration
AC Power consumption	Maximum 2.8kW
Operation Environment	Indoors Rated Temperature: +10°C ~+35 °C Operating Temperature: +0 °C ~+40 °C Storing Temperature: -10°C ~+70 °C Relative Humidity:<80%
Accessory	Operation manual.....x1 Line cord.....x1
Dimensions	137mm(H) × 430(W) × 500mm(D)
Weight	Approximate 25kgs

8. MAINTENANCE

Cleaning

Use a soft cloth moistened with a small amount of water or mild detergent, Do not spray cleaner directly onto the instrument as it may leak into the cabinet and cause damage.

Do not use chemicals containing benzine, benzene, xylene, acetone, toluene, or similar solvents.

Do not use abrasive cleaners on any portion of this equipment.

Troubleshooting

Troubleshooting is limited to checking the input power fuse. If you have other difficulties, please contact your supplier or a competent repair specialist.



Warning: To avoid electrical shock, the power cord protective Grounding conductor must be connected to ground.