

OPERATION INSTRUCTIONS MANUAL

1689 & 1690

REGULATED DC POWER SUPPLY

INTRODUCTION

- ⇒ The 1689 and 1690 DC Regulated Power Supplies provide large power output. Suitable for a variety of uses, especially for DC operated radio equipment. Source from an AC outlet providing a variable voltage of 1V to 15V, up to 28A (at 13.8V) of continuous operation.
- ⇒ Please read through this operating instruction carefully and follow the instructions to prevent misuse. This manual should be kept for reference.

FEATURES

- ⇒ **Overload Protection**
A current foldback circuit is adopted to protect the unit from overloading. The overload indicator will light up when the unit is overloaded.
Note: When the overload protection circuitry is activated, switch off the unit and disconnect the load immediately. Extended operation under overload conditions will eventually cause damage to the unit.
- ⇒ **High RFI Stability**
The unit is specifically designed for use with radio communication equipment. It therefore includes extensive filtering to provide high immunity from erratic operation caused by Radio Frequency Interference (RFI).
- ⇒ **Variable Speed Cooling Fan**
The cooling fan of the unit varies with the temperature of the unit. As the unit becomes hotter the speed of the fan becomes faster. It is more effective than an ordinary cooling fan with fixed speed system.
- ⇒ **Multiple DC Output Terminals**
The unit has two pairs of (3A) snap-in DC connections and a pair of (28A) screw-on DC output terminal (located on rear).
- ⇒ **Variable Output**
The output voltage ranges from 1V to 15V. The output voltages are suitable for various uses.

INSTALLATION

- ⇒ Ensure the unit is properly grounded to prevent electric shock from high voltage caused by leakage or lightning.
- ⇒ DO NOT place the unit in a high humidity, dusty and/or sunny areas.
- ⇒ Place the unit in a location which allows free air circulation.
- ⇒ DO NOT place the unit close to TV sets or CRT monitor.
- ⇒ Couple the unit with an AC outlet directly. Sourceing via distribution cables (extension cords) may heat plugs and cables.
- ⇒ Place the unit horizontally for accurate meter readings.

CAUTION

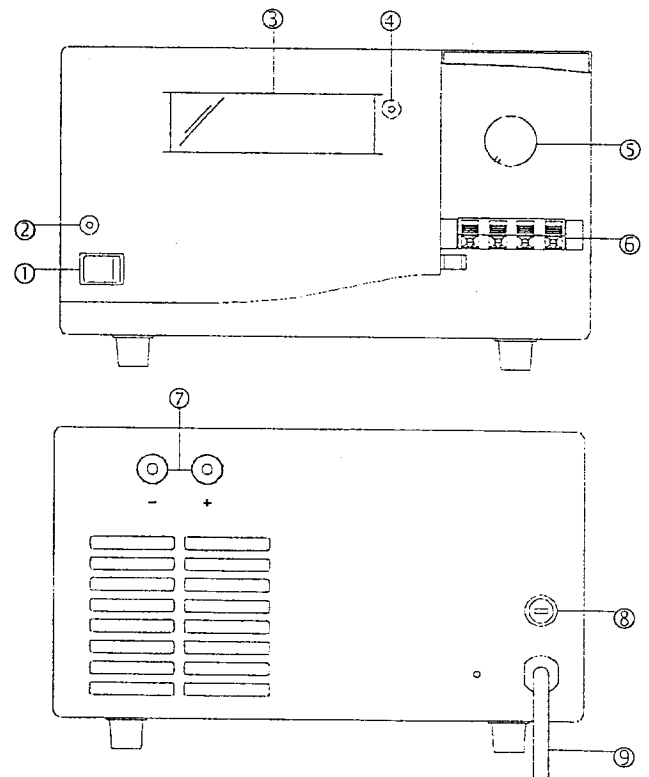
- ⇒ DO NOT use this unit for equipment that requires higher current than this unit can provide.
- ⇒ DO NOT use this unit for the equipment, which requires high current at start-up (surge) as it may damage the unit. For example, lamps and motorized equipment have large surge current.
- ⇒ DO NOT replace the fuse before determining why the fuse opened. Replace fuse with the correct value only.

SAFETY PRECAUTIONS

The following precautions **MUST** be read carefully to help prevent electric shock.

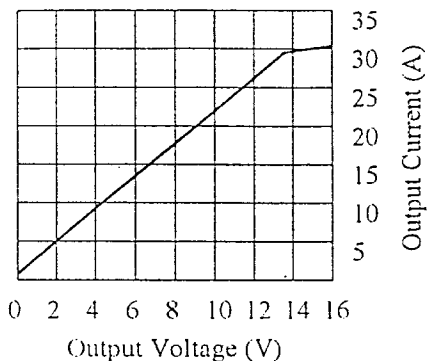
- ⇒ **NEVER** remove the metal cover of the power supply while AC power is connected.
- ⇒ **NEVER** touch the power supply when your hands are wet.
- ⇒ **NEVER** operate the power supply if foreign materials such as metallic objects, water, or other debris have fallen inside.
- ⇒ **NEVER** operate a unit that has been damaged, as the voltage regulation circuitry may have been disabled. The resulting high DC voltage could cause damage or injury.
- ⇒ **NEVER** allow foreign objects to touch across the DC Power Output terminals.
- ⇒ If you have the need to inspect the interior of the power supply, be sure to let it cool down completely. Some components will be very hot.

FRONT AND REAR PANEL



- ① POWER SWITCH: Switch On/Off the unit.
- ② POWER LED: Lights up when the unit is turned on.
- ③ METER: Current and Voltage indicator.
- ④ OVERLOAD INDICATOR: Lights up when Overload Protection circuit is activated.

- ⑤ **VOLTAGE ADJUSTMENT KNOB:** Adjusts the output voltage from 1-15V. One touch 13.8V setting is made at the clicking point. The maximum output current is limited by output voltage shown in the graph below.
- ⑥ **3A OUTPUT TERMINAL:** Two pairs of easy snap-in output terminals for 3A Maximum output. Red is (+) positive and Black



is (-) negative.

- ⑦ **28A OUTPUT TERMINAL:** Screw-on high capacity output terminal. Red is (+) positive and Black is (-) negative.

NOTE: When using the 28A Output Terminal use 10AWG stranded copper wire or larger.

- ⑧ **FUSE.**

- ⑨ **POWER CORD.**

CONNECTION AND OPERATION

- 1 Turn off the unit.
- 2 Be sure an AC power source fits the unit labeled input voltage. Plug the unit in to the AC outlet.
- 3 Turn ON the unit and adjust the output voltage to match the input voltage of the equipment. Then turn OFF the unit.
- 4 Make sure the equipment is/are turned off.
- 5 Connect red (+) output terminal of the unit to the positive polarity input of the equipment and connect black (-) output terminal of the unit to the negative polarity input of the equipment.
- 6 First turn ON the power supply and then turn the equipment ON.
- 7 When an operation is over, turn OFF the equipment first and then turn OFF the unit.

SPECIFICATIONS

	1689	1690
OUTPUT VOLTAGE	DC 1-15V Variable	
OUTPUT CURRENT	28A (at 13.8V)	
RIPPLE & NOISE	5mV (peak to peak)	
LINE REGULATION	5mV ($\pm 2\%$ Load)	
LOAD REGULATION	50mV (0-100% Load)	
POWER SOURCE	120V / 60Hz	
VOLTMETER TYPE	Precision Analog	Digital LED
AMMETER TYPE	Precision Analog	Digital LED
COOLING FAN	Temperature Sensitive Variable Speed Cooling Fan	
DIMENSION (WxHxD)	9.84" x 5.5" x 8.86" (250mm x 140mm x 225mm)	
WEIGHT	19.9 lbs. (9 Kg)	
ACCESSORIES	User Manual	

BK PRECISION®

22820 Savi Ranch Parkway, Yorba Linda, California 92887