

**L-72-SB  
LOAD BANK**

**MANUAL CONTAINS  
OPERATING INSTRUCTIONS  
PARTS LIST  
WIRING DIAGRAMS  
SERVICE INSTRUCTIONS**

**CANNON LOAD BANKS, INC.  
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PALMETTO, GA. 30268  
770 - 463 - 0504**

This load bank is manufactured and protected under U. S. patent number 4,445,047



# CAUTION

THIS LOAD BANK IS DESIGNED FOR THE TESTING AND SERVICING 115/200V 400HZ GROUND POWER UNITS. THESE GENERATORS HAVE THE POTENTIAL OF DELIVERING A LETHAL SHOCK. THIS LOAD BANK SHOULD BE USED ONLY BY TRAINED AND QUALIFIED PERSONNEL. THIS LOAD BANK IS DESIGNED FOR TEMPORARY USE ONLY. THE LOAD RESISTORS ARE ENERGIZED WHEN THE RATE SWITCH IS OFF, THEREFORE DO NOT INSERT ANY OBJECTS IN THE GRILL ASSEMBLY. DO NOT BLOCK THE AIR FLOW OR USE IF THE AIR FLOW IS REVERSED.



# MANUAL FOR L-72-SB LOAD BANK

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## DESCRIPTION

1-1 PURPOSE OF LOAD BANK: The L-72-SB is a portable load bank designed to be used for field servicing and testing 400HZ power units. The load bank can also be shipped to different locations using the carrying case.

1-2 RATING OF LOAD BANK: The L-72-SB is rated at 64 KW full loads with seven lower load steps. The other steps are 8KW, 16KW, 24KW, 32KW, 40KW, 48KW and 56KW. All steps are continuous.

1-3 LOAD BANK DESCRIPTION: The load bank is completely self-contained and needs no power source to operate other than the power unit. The different sides of the load bank are shown in fig. 1-1. The air enters the right side (fan side) and exits the left side.



FIGURE 1-1

LENGTH	20 IN.
WIDTH	8 IN.
HEIGHT	11 IN.
WEIGH	34 LBS.

# CONTROL PANEL LAYOUT

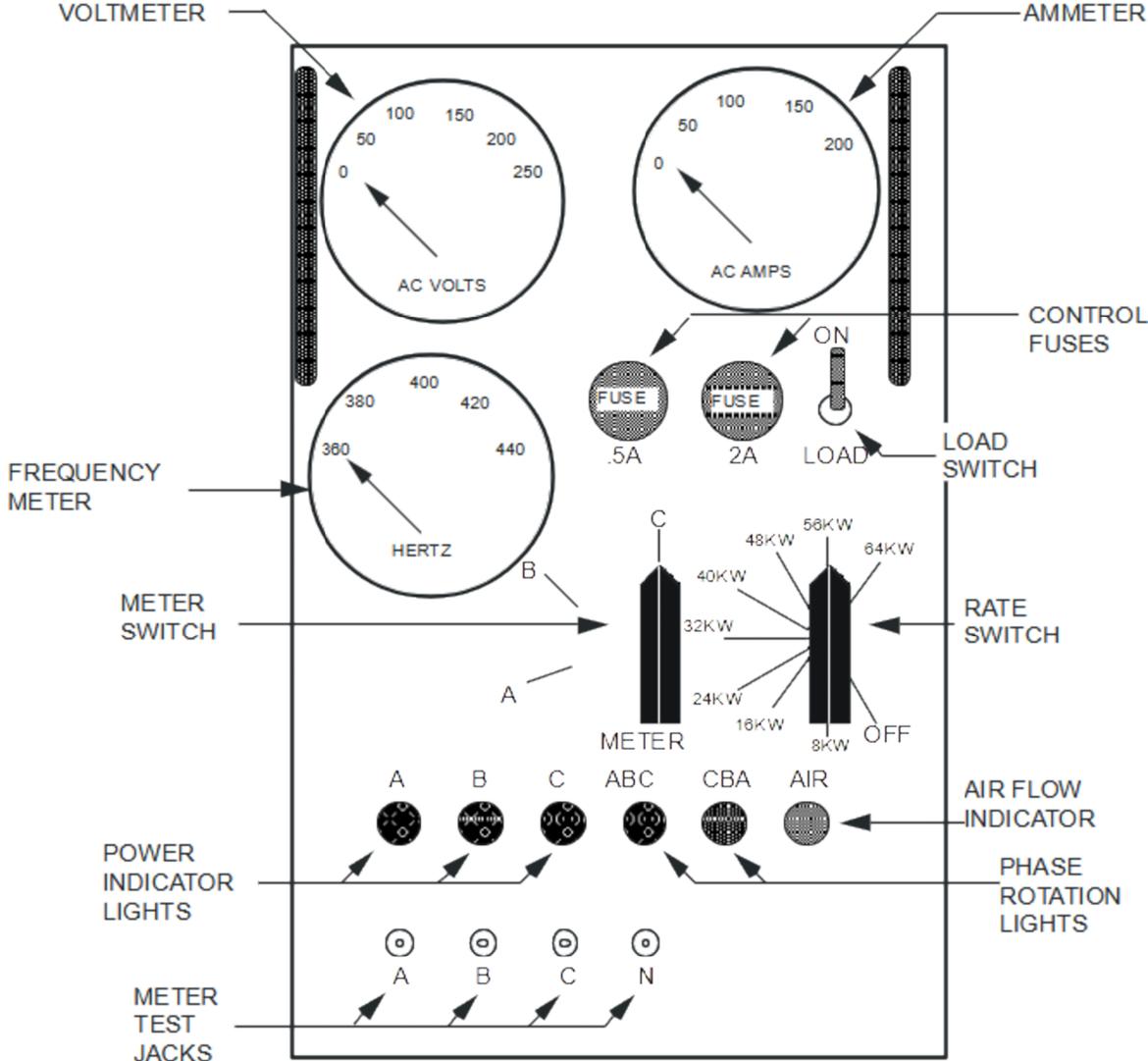


FIGURE 1 - 2

1-4 CONTROL DESCRIPTION: The following is a description of the controls on the control panel (see figure 1-2) on page 2.

VOLT METER - A 250 volt meter used to measure the line to neutral voltage on the power cable. A, B, or C phase can be selected using the meter selector switch. The meter should read approximately 115 volts. A 200 volt reading would indicate a line and neutral cable switched on the power unit or cable.

AMMETER - A 200 amp ammeter used to measure the load being used by the load bank. It monitors "A" phase.

FREQUENCY METER - A 360 - 440 HZ meter used to measure the frequency of the power unit. It should read approximately 400 HZ.

CONTROL FUSE - A 2A and .5A fuse used in the control circuit.

LOAD - Switch is used to turn off or on the 28V power supply that powers the control circuit in the load bank.

METER SWITCH - Switch used to select A, B, or C phase on the voltmeter.

RATE SWITCH - Switch used to select the desired rate on the load bank. The rates are as follows:

1. 8 KW balanced load
2. 16 KW balanced load
3. 24 KW balanced load
4. 32 KW balanced load
5. 40 KW balanced load
6. 48 KW balanced load
7. 54 KW balanced load
8. 64 KW balanced load

POWER INDICATOR LIGHTS - These lights will light to indicate power on A, B, and C phase. All three lights should be on.

PHASE ROTATION LIGHTS - These lights indicate ABC or CBA phase rotation. The ABC light will be on when the phase rotation is correct. Do not operate if the red CBA light is on.

AIR - The light will be on when the fans are at sufficient speed to turn the air flow switch on.

METER TEST JACKS - This provides a place to connect an external meter. There is a test jack for each cable pin.

POWER RECEPTACLE - The cable that comes with the load bank is plugged into this receptacle.

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## OPERATION

2-1 SETTING UP THE LOAD BANK - Place the load bank in an area free from fuel, oil, or any other flammable substance. The load bank should be positioned so that any strong wind or air currents will flow with the air flow of the load bank.

2-2 APPLYING POWER - The load bank should be connected to a power source with an output of 120 / 208V (120V line to neutral / 208V line to line). Make sure that the power unit is off before connecting the cable to the power source. Plug the power cable plug into the load bank. Turn the rate switch and the load switch on the load bank to the off position. Turn on the output of the 400hz power source.

2-3 CHECKING THE POWER - check the following:

- A. The air flow should be as indicated by the air flow arrow.
- B. The 3 amber A, B, C lights should be on.
- C. The voltmeter should read 120V on A, B, and C phase. A 200V reading would indicate a line and neutral cable reversed.
- D. The amber ABC light should be on. A red CBA light would indicate reversed phase rotation. DO NOT operate if the phase rotation is reversed.
- E. The AIR light should be on. This indicates that the fans have activated the air flow switch.
- F. The frequency meter should read approximately 400HZ.
- G. The ammeter should read 0A.

2-4 APPLYING THE LOAD - If the above steps checked OK, turn on the load switch and add the load desired with the rate switch. If the power unit is wet stacked, the load will need to be added slowly allowing the carbon to clear out before going to the next step. The load will be added in 8KW steps up to 64KW.

Check to see that the voltage and frequency does not drop beyond acceptable limits under load. Return the rate switch to the off position.

2-5 SHUTTING DOWN - After turning the rate switch off, allow the load bank to cool down before turning the power unit off. Turn the power unit off and disconnect the power cable plug.

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## PARTS INFORMATION

The following pages list the parts used in the load bank. All of the major parts are shown. Wire, screws, bolts, and small miscellaneous hardware are not listed. Parts that are purchased from a vendor will show a vendor name. These names refer to the vendor list is on page 8. Parts manufactured for or by Cannon Load Banks will not show a vendor name.

A part number can be found by first locating the part on a drawing. After finding the part use the number to refer to the parts list on the opposite page. Each part will have a drawing number, Cannon Load Banks part number, description and the number used for each load bank.

Parts should be ordered from the address below giving the machine model number, part number and the description.

CANNON LOAD BANKS, INC.  
502 PARK STREET  
PALMETTO, GA 30268  
PHONE 770 - 463 - 0504

# CONTROL PANEL PARTS

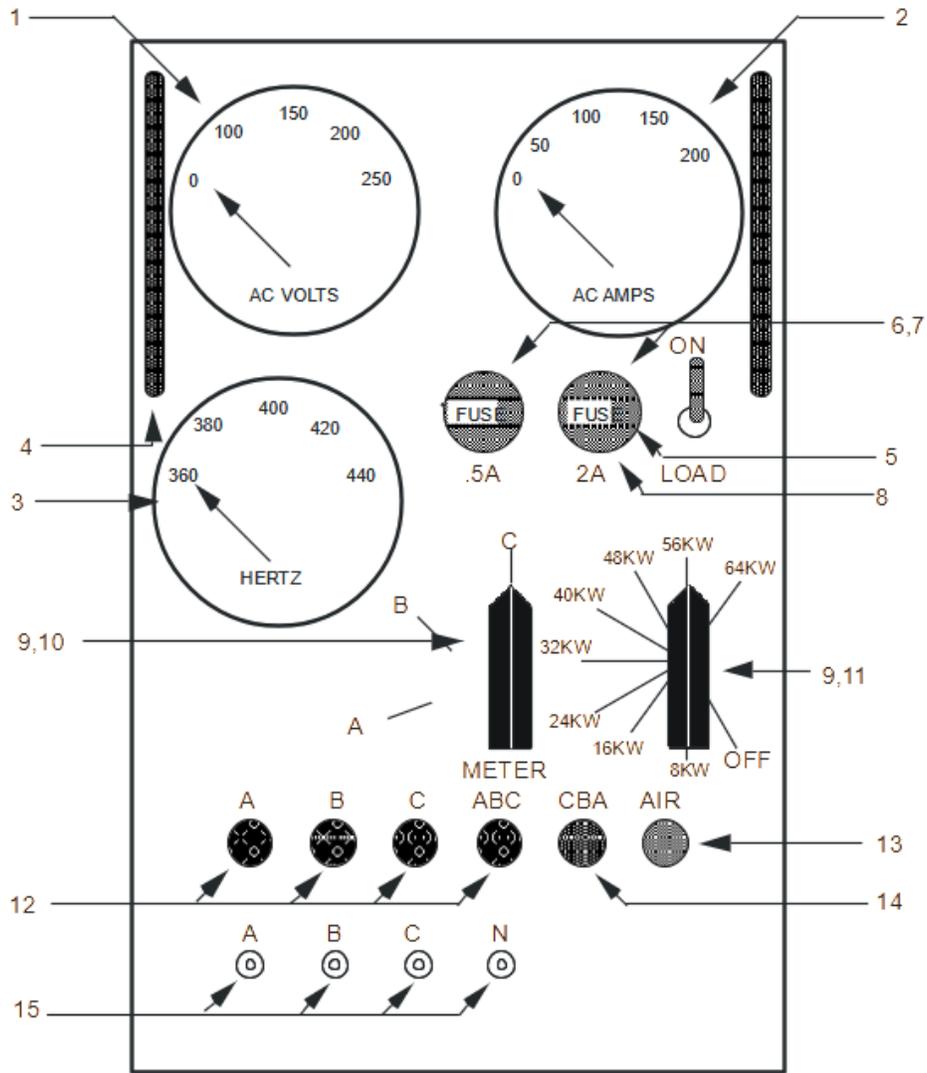


FIGURE 3 - 1

CONTROL PANEL PARTS  
FIGURE 3-1

DRAWING NUMBER	PART NUMBER	DESCRIPTION VENDOR NO.	NUMBER USED
1	MR-31	0 - 250V VOLT METER	1
2	MR-66	0 - 200 A AMMETER	1
3	MR-45	360 - 440HERTZ FREQUENCY METER	1
4	HD-25	HANDLE	2
5	SW-21	TOGGLE SWITCH DPST	1
6	FH-10	FUSE HOLDER	2
7	FS-05	.5A GLASS FUSE	1
8	FS-02	2A GLASS FUSE	1
9	KN-10	POINTER KNOB	2
10	SW-13	ROTARY SWITCH 3POSITION 1 POLE	1
11	SW-72	11 POSITION 2P ROTARY SWITCH 2 SECTION	1
12	LT-10	115V AMBER LIGHT	4
13	LT-28	28V GREEN LIGHT	1
14	LT-15	115V RED LIGHT	1
15	TP-10	METER TEST JACKS	2

# INTERIOR PARTS LAYOUT

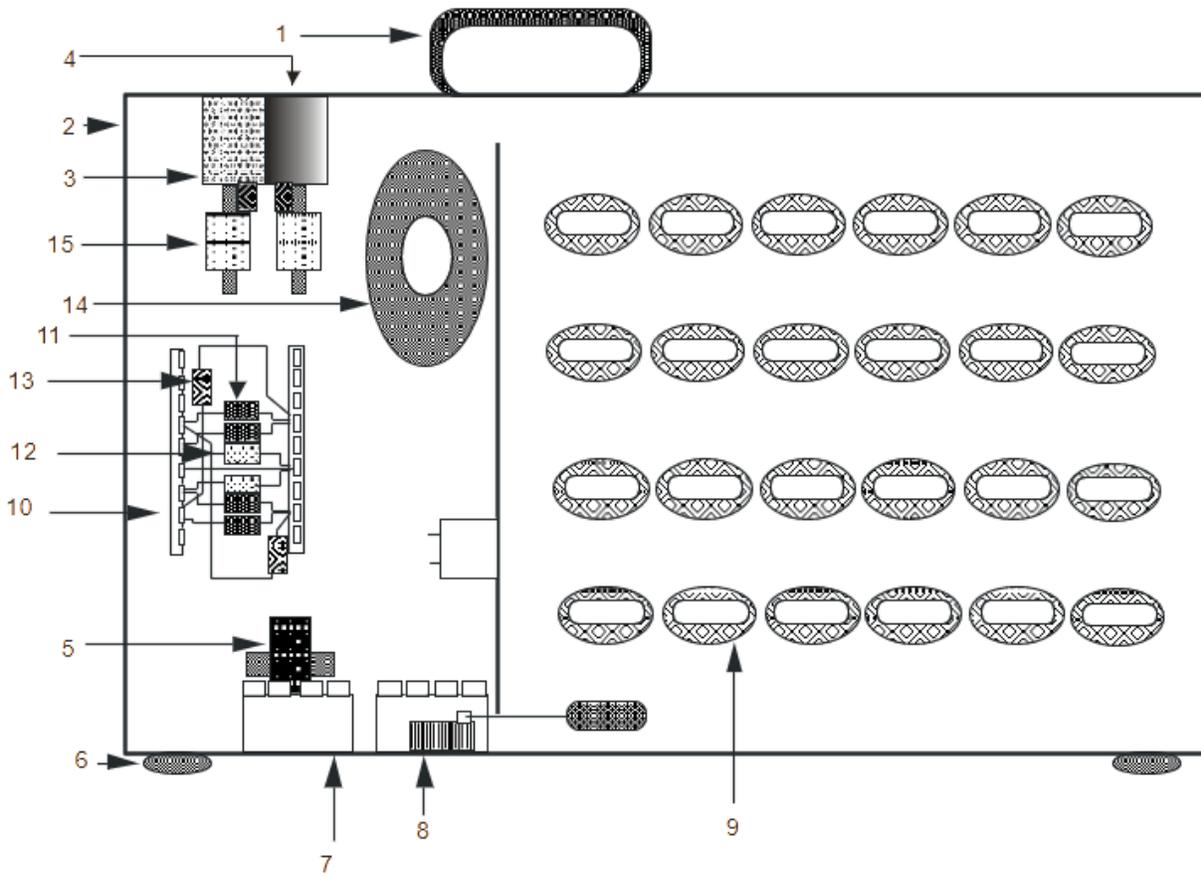


FIGURE 3 - 2

INTERIOR PARTS  
FIGURE 3-2

DRAWING NUMBER	PART NUMBER	DESCRIPTION VENDOR NO.	NUMBER USED
1	HD-10	FOLDING HANDLE	1
2	BX-40	20" X 11" X 8" ALUM BOX	1
3	SB-12	YELLOW SB CONNECTOR	1
4	SB-13	BLUE SB CONNECTOR	1
5	TR-26	24V POWER SUPPLY 1.5A	1
6	FT-10	GLIDES	4
7	RY-16	RELAY 24VDC 2P 30A (FLANGE MOUNT)	8
8	SW-11	AIR FLOW SWITCH	1
9	LR-05	5Ω RESISTOR	24
10	TM-07	TERMINAL STRIP 7 PS	2
11	RC-25	56KΩ RESISTOR	4
12	RC-19	180KΩ RESISTOR	2
13	CP-50	.0047 MFD 600V CAPACITOR	2
14	CT-25	200:5 CURRENT TRANSFORMER	1
15	FS-20	200A FUSE	3
*	GL-20	RESISTOR GRILL	1
*	RD-10	DIODE 1000V 1A	6

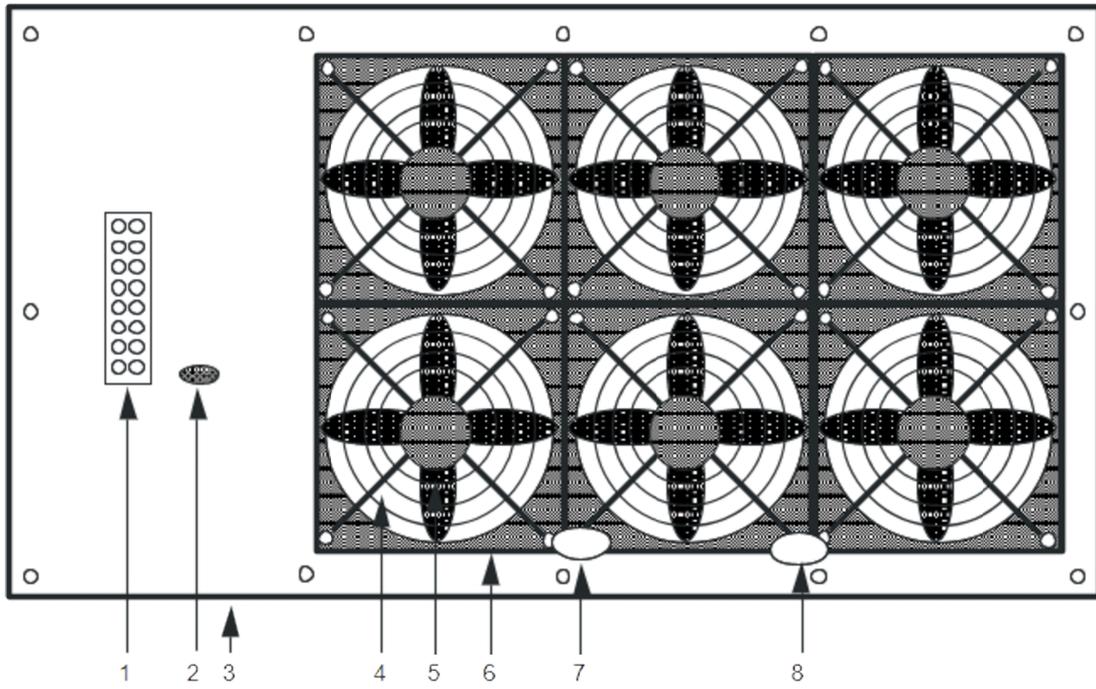


FIGURE 3 - 3

FIGURE 3-3

DRAWING NUMBER	PART NUMBER	DESCRIPTION VENDOR NO.	NUMBER USED
1	TM-20	8 POSITION TERMINAL STRIP	1
2	SW-12	TILT SWITCH	1
3	FP-40	ALUM.FAN PANEL	1
4	GL-10	FAN GRILL	6
5	GP-15	GRILL W/P	6
6	FN-40	200V 400HZ 3P FAN	6
7	TS-17	THERMAL SWITCH 175° V-GEMLINE	1
8	TS-15	THERMAL SWITCH 155° V-GEMLINE	1

## VENDOR LIST

The following is a list of vendors for parts shown in the parts list.

### VENDOR

Bussmann Manufacturing  
2536 W.University St.  
St. Louis , Mo. 63017

Centralab Switches  
Chicago, IL

Cutler-Hammer  
4187 NE Expressway  
Atlanta, Ga. 30340

E G & G Rotron  
Custom Division  
Hasbrouck Lane  
Woodstock, NY 12498

Electric Supply Co.  
433 Bishop St.  
Atlanta, Ga. 30325

Gemline Products, Inc.  
12472 Edison Way  
Garden Grove, Ca. 92641

J - B - T Instruments, Inc.  
424 Chapel Street  
New Haven, Ct.

National Electronics  
Richardson Electronics, LTD  
40W267 Keslinger Rd.  
LaFox, IL. 60147

Newark Electronics  
6950 Peachtree Ind. Blvd.  
Norcross, Ga. 30071

Syracuse Electronics Corp.  
Syracuse, NY

Vemaline Products  
333 Strawberry Field Rd.  
Warwick, RI. 02887

W. W. Grainger  
2255 Northwest Parkway  
Marietta, Ga. 30067

### GENERAL SERVICE

There is no regular maintenance required on the load bank. There are no adjustments inside the load bank.

It should however be checked periodically for defective fans, burned out light bulbs, and defective meters.

To remove the fan panel, remove the screws around the outer edge.

The meters can be removed and replaced from the front panel.

The fan grills should be kept free of any trash.

Do not place any objects in the fan or resistor grill.

The following are steps to take to replace a defective fan.

1. Remove the screws holding the fan panel to the load bank.
2. Remove the seven wires on the terminal strip coming from the load bank
3. Drill out the rivets holding the fan (four on each side).
4. Lift up the fan and cut the wires to the fan. Attach the new fan wires to the cut wires and use the cut wires to pull the new wires to the terminal strip. Remove the old wires from the terminal strip and install the new fan wires.
5. Rivet the new fan back to the fan panel and install the fan guard.
6. Install the seven wires back on the terminal strip and place the fan panel back on the load bank. Make sure that the wires are on the proper terminals.

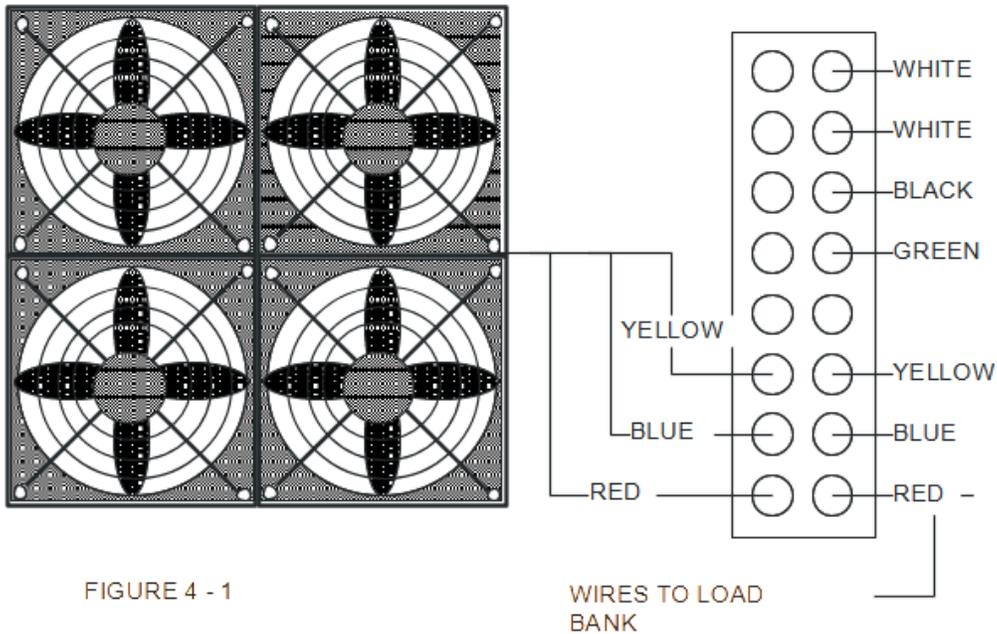


FIGURE 4 - 1

- C1,C2 CAPACITOR, .0047MFD
- CT1 CURRENT TRANSFORMER 200:5
- D1-6 DIODE, 1A, 1000V
- F51 FUSE, 2A
- F52 FUSE, .5A
- F53-5 FUSE, 200A
- K1-8 RELAY, 24VDC 2P DT 30A, FLANGE
- L1-5 LIGHT, NEON 115V
- L6 LIGHT, 25V
- LR1-24 LOAD RESISTOR, 50 OHM
- M1 METER, 0-250 VOLT
- M2 METER, 0-200A
- M3 METER, 360-440 HERTZ
- R1-4 RESISTOR, 56K
- R5-6 RESISTOR, 180K
- RP1 RECEPTACLE, 4 POLE
- SW1 SWITCH, TOGGLE, DPST
- SW2 SWITCH, ROTARY 8 POS 2 POLE 2 SECTION
- SW3 SWITCH, ROTARY 3 POS 1 POLE
- SW4 SWITCH, AIR FLOW
- TP1-4 TEST PINS
- TR1 POWER SUPPLY, 28VDC 1.5A

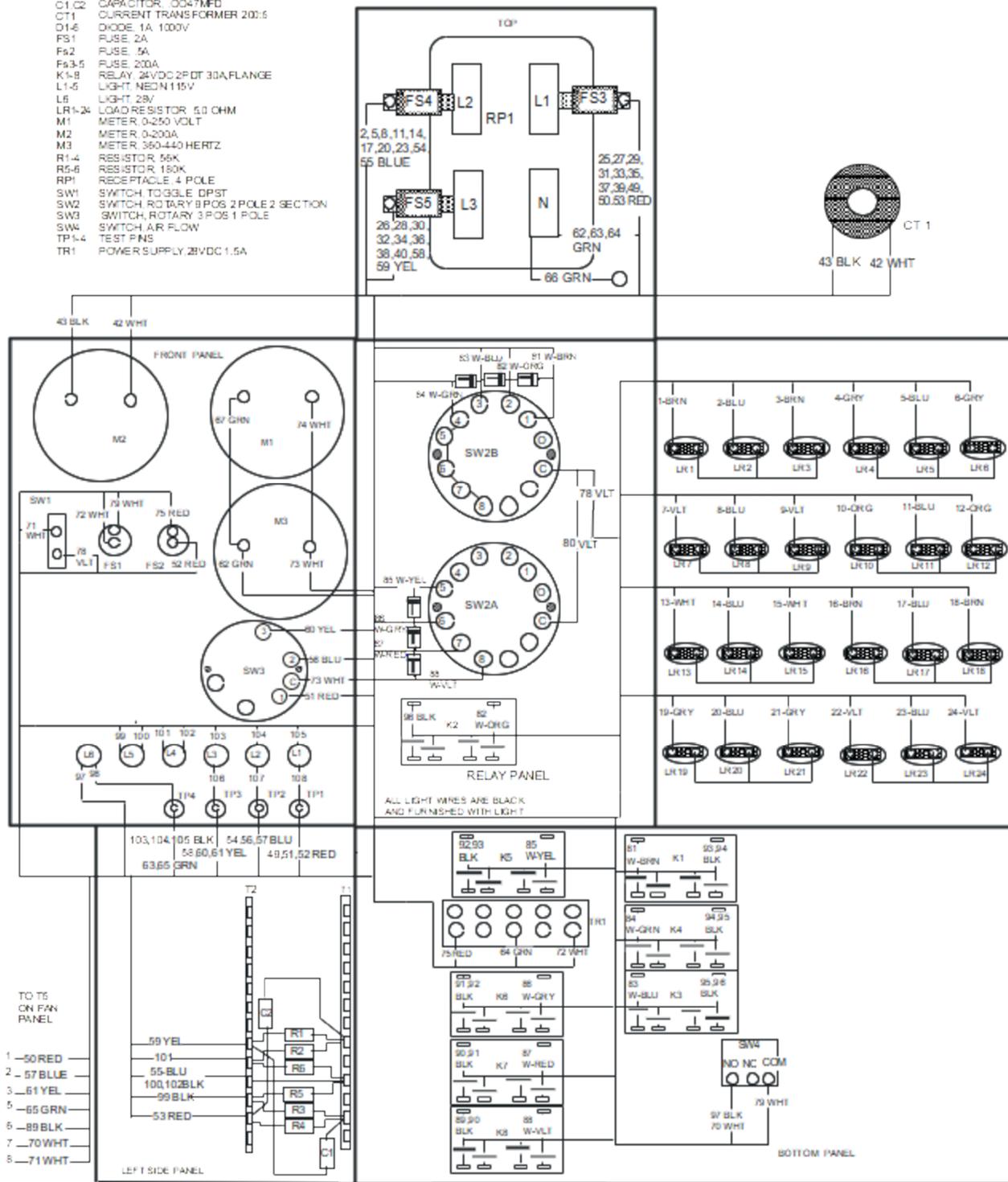


FIGURE 5-1

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# FAN PANEL WIRING

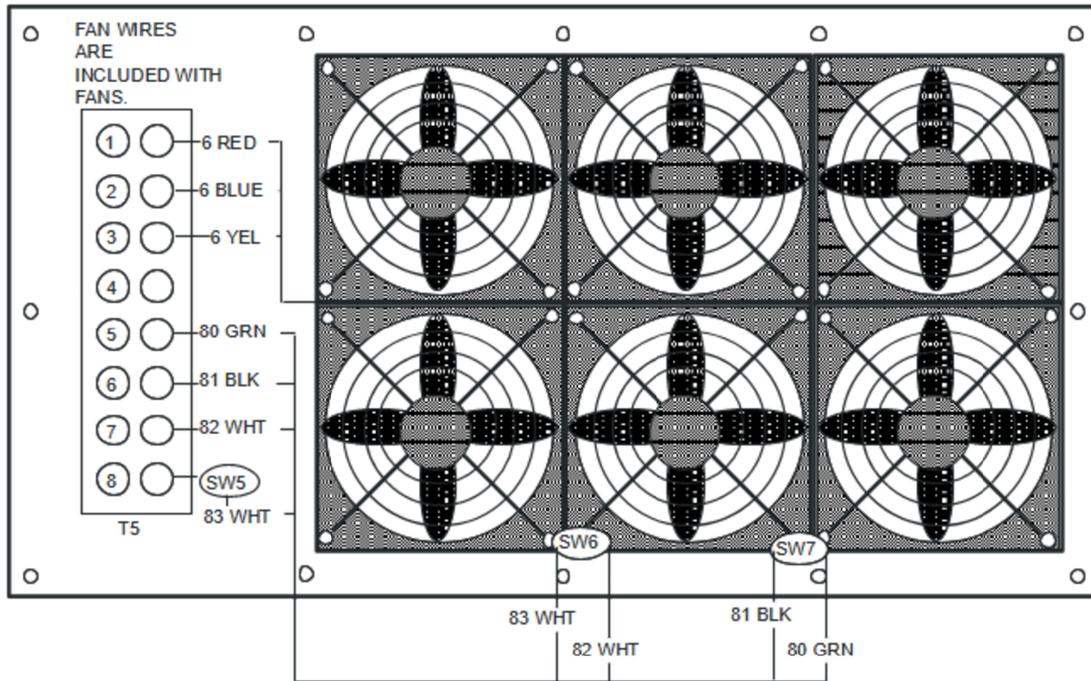


FIGURE 5-2

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# L-72-SB SCHEMATIC

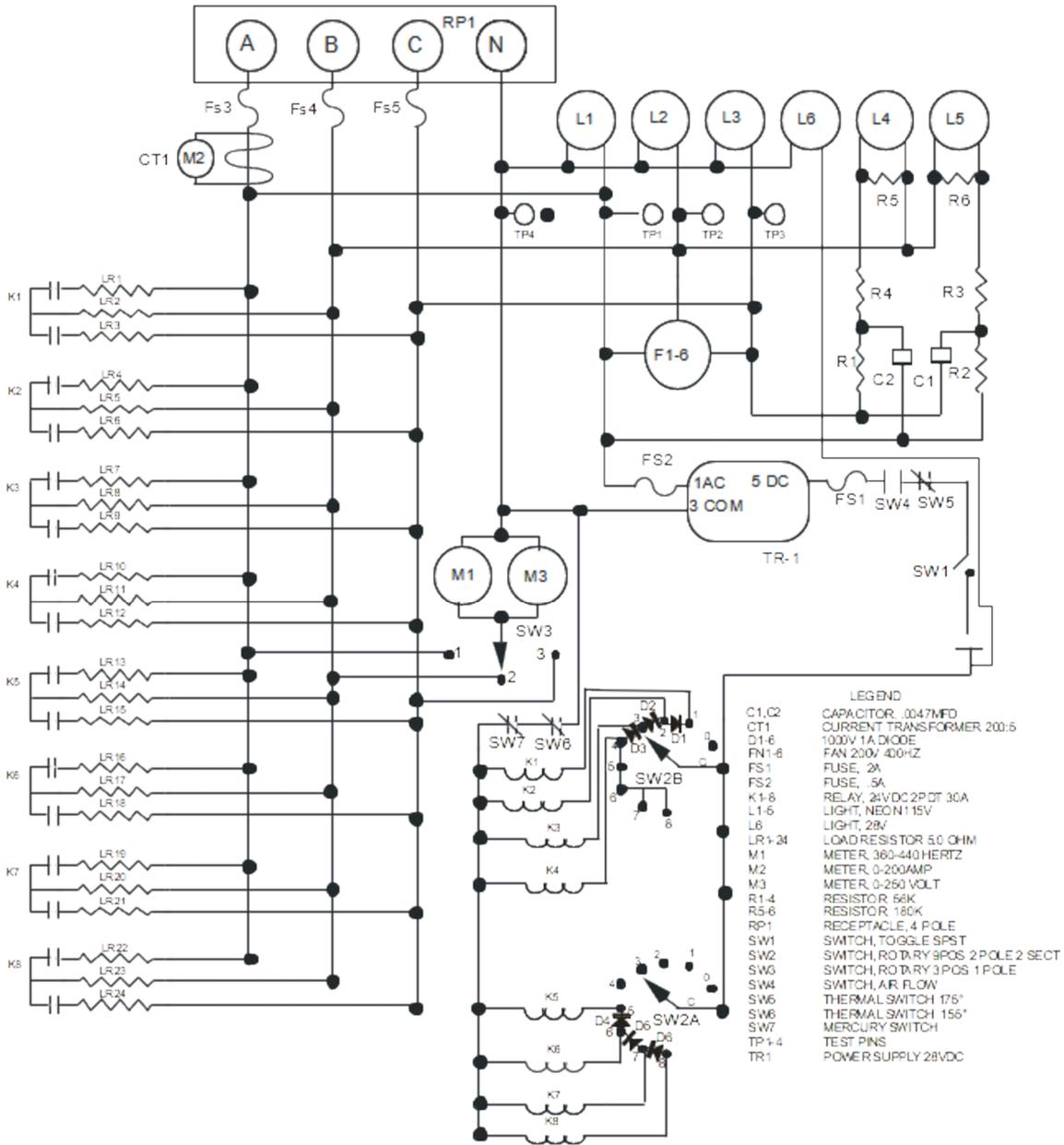


FIGURE 5-3

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