KEPCO 26372 Eight Output Power Assembly Instruction Manual

KEPCO®
THE POWER SUPPLIER™

INSTRUCTION MANUAL
POWER ASSEMBLY
MODEL 26372

Contents

Eight Output Power Assembly

POWER ASSEMBLY
MODEL
26372

IMPORTANT NOTES:

1. This manual is valid for the following Model and associated serial numbers:

   MODEL

   SERIAL NO.

   REV. NO.

   26372

2. A Change Page may be included at the end of the manual. All applicable changes and revision number changes are documented with reference to the equipment serial numbers.

   Before using this Instruction Manual, check your equipment serial number to identify your model. If in doubt, contact your nearest Kepco Representative, or the Kepco Documentation Office in New York, (718) 461-7000, requesting the correct revision for your particular model and serial number.

3.

Basic Equipment

Power Assembly System Model 26372 consists of the following items (see List of Figures):
Three RKW 48-7K-26401 Power Supplies (300 Watts),
One RKW 28-12K-26405 Power Supply (300 Watts),
Four RKW 48-13K-26398 Power Supplies (600 Watts),
One JBW 24-0R5 Power Supply (10 Watts),
One Custom Rack Adapter (8 3/4H x 19W x 21D),
One Custom Front Panel Assembly consisting of: (ckt. brk., 15 Amps., double pole, AC ON Indicator, two-8 LEDs PCBs,
2 DVM with one 8-Pos. Switch),
One Custom Rear Panel Assembly consisting of:
(one AC Input Receptacle, 8 I/O Control Interface Connectors,
8 DC Output Connectors AMP 212502-1, one GND stud), Eight KT 3130 Current Sensing Resistor, 0.01 Ohms (0-19.99 Amp),
One 20-Term. Terminal Block, AC Distribution,
One Resistor Network, 999K/1K (PN 234-0030),
One Current Limiting Resistor

Electrical Specifications

Input Voltage: Nominal: 208 Vac; Range: +/- 10%
Input Frequency: Nominal: 50/60 Hz.; Range: 47-63 Hz,
Input Power: Maximum 2500 VA

Output: Eight (8) programmable constant current power sources. Each output is programmed using a 0-10 Vdc signal representing a 0-10 A output current value. The load for each current source is a coil with a constant resistance as shown on Table 1. .

TABLE 1. OUTPUT POWER

LOAD LABEL	LOAD (OHMS)	CURRENT RANGE (A)	MAXIMUM VOLTAGE (V)
Coil A (PS1)	5.0	0-8.0	40.0
Coil B (PS2)	7.	0-4.0	26.0
Coil C (PS3)	38.0	0-1.0	38.0
Coil D (PS4)	10.0	0-5.2	52.0
Coil E (PS5)	6.0	0-10.0	60.0
Coil F (PS6)	8.0	0-7.5	60.0
Coil G (PS7)	6.0	0-10.0	60.0
Coil H (PS8)	6.0	0-10.0	60.0

Mechanical Layout

See Figures 1, 2.

Documentation

Electrical and Mechanical Specifications are documented in the following:
RKW 48-13K-26398 Power Supply Instruction Manual
RKW 48-7K-26401 Power Supply Instruction Manual
RKW 28-12K-26405 Power Supply Instruction Manual
JBW 10 Watts Series Power Supply Instruction Manual
DMS 2X9 Accessory Power Supply Instruction Manual
KT Accessory Equipment Instruction Manual
Power Assembly System 26372 Instruction Manual

Features, Accuracy and General Specifications

Front panel includes:
Main Circuit Breaker ON/OFF Switch, 15A, double pole, AC ON Indicator,
Eight (8) Output Enabled Green LED Indicators,
Eight (8) Fault Red LED Indicators,
Two (2) LCD Digital Display Panel Meters (3.5 digit), to measure the output voltage and current delivered by a selected coil (load),
Eight (8) Positions Rotary Switch which permits selection of the coil whose output voltage and current are displayed by the respective panel meter.
Rear panel includes:
One AC Input Receptacle, IEC type, 220 Vac. An eight (8) foot long line cord is provided to mate with the IEC Receptacle, J1. The users end of the line cord is provided
with a standard NEMA plug, L6-20P.
Eight (8) Output Power Connectors, AMP 212502-1, designated J2-A through J2-H. The typical wiring of the these connectors (socket type terminals) is: (+) = A4, (-) = A3, (GND) = A1.
Eight (8) Control Interface Connectors, designated J3-A through J3-H. These connectors are 25 pin, D-subminiature, socket type terminals. See Table 3 for typical pin functions.
One GND stud
Accuracy: Output current programming accuracy: –0.15%
Front Panel Meter (V & I): –0.5%
Current Source Line and Load Regulation: 10mA max.
Environmental Operating Conditions:
Temperature: 0° C to 50° C

Relative Humidity: 0 to 80%, non-condensing
Altitude: Up to 2000 meters.

System Configuration

Power Assembly System 26372 contains eight constant current programmable power supplies, designated PSI through PS8 (Coil A through Coil H) and one power supply designated PS9 which provides operating power for the “Fault” Leds (see Fig. 1, 2, 4).
AC input power to Power Supplies PSI through PS9 is applied via AC Input Receptacle J1, Circuit Breaker CB1 and AC Distribution Block TB1. When Circuit Breaker CB1 is closed, the Pilot Light DS9 indicator is lit. Resistor RL1 is a current limiting resistor for DS9.
Each of the eight DC Outputs associated with Power Assembly System 26372 has one “Output Enabled” pilot indicator, designated A9DS1 through A9DS8, and one “Fault” indicator, designated A1ODS1 through A1ODS8, which are contained on the front panel assembly. A9R1 through A9R8 and MORI through A10R8 are current limiting resistors for LEDs A9DS1 through A9DS8 and AIODSI through A1ODS8, respectively. The “Output Enabled” Leds are powered by the signals available from each Control Interface Connector designated J3A through J3H.
Power Supply Model DMS 2X9 provides operating power for Meters MI and M2. The eight “voltage sense” signals from PSI through PS8 are applied to Voltmeter M1 via Voltage Divider RN1 by means of Switch S1. The eight “current sense” signals from PS1 through PS8 are switched to Ammeter M2 via Current Sensing Resistors RS1 through RS8 by means of the same Switch, S1.
Power Assembly System 26372 output connections are made at DC Output Receptacles J2-A through J2-H contained on Custom Rear Panel Assembly, PN 300-0428.
Table 2 lists the functions assigned to the pins of output Connectors J2-A through J2-H.

TABLE 2. OUTPUT CONNECTOR J2 PIN FUNCTIONS (TYP)

CONNECTOR	PIN	FUNCTION
J2A-J2H (AMP 212502-1)	A4	+
	A3	–
	Al	GND

The Power Assembly System 26372 Input/Output Control Interface is achieved through the use of eight (8) Control Interface Connectors designated J3-A through J3-H. Each one of the pc boards associated with these connectors controls and monitors the output current delivered by the power supply (PS1 through PS8).
A 0 to +10V input programing signal will program the respective power supply output current from 0 to +10A. The full scale current value is calibrated at the factory and is achieved by adjusting Potentiometer R9 of the respective power supply control board.
(See Figure 3 for A1-A8 component location and Figure 5 for schematic diagram).
On the same board, there is a second Potentiometer, R10, which is adjusted at the factory for the maximum voltage of the respective power supply (see Table 1).

Each power supply is ENABLED by applying a separate signal of +24Vdc between pins 1 and 2 of J3-A through J3-H. A +24Vdc signal will turn on the respective power supply output, while a 0Vdc signal will disable the output.
A Power OK signal output flag is provided between pins 17 and 6 of J3-A through J3-H. This signal is given by the output transistor of an optocupler. When the power supply is operating correctly, (PS OK), these two pins are shorted. When a fault is detected, (PS not OK), the circuit will open. The fault condition is defined whenever the power supply goes into an overvoltage, overcurrent, overtemperature or there is a fan failure.
Two additional analog output signals are provided. One monitors the output current and is a signal of 0 to +10V, proportional to the 0-10A output current. The terminals for current monitoring are 7 and 12.
The second analog output signal monitors the output voltage. A 0 to +10V signal represents an output voltage of 0 to +60V.
The voltage monitoring terminals are 22 and 23.

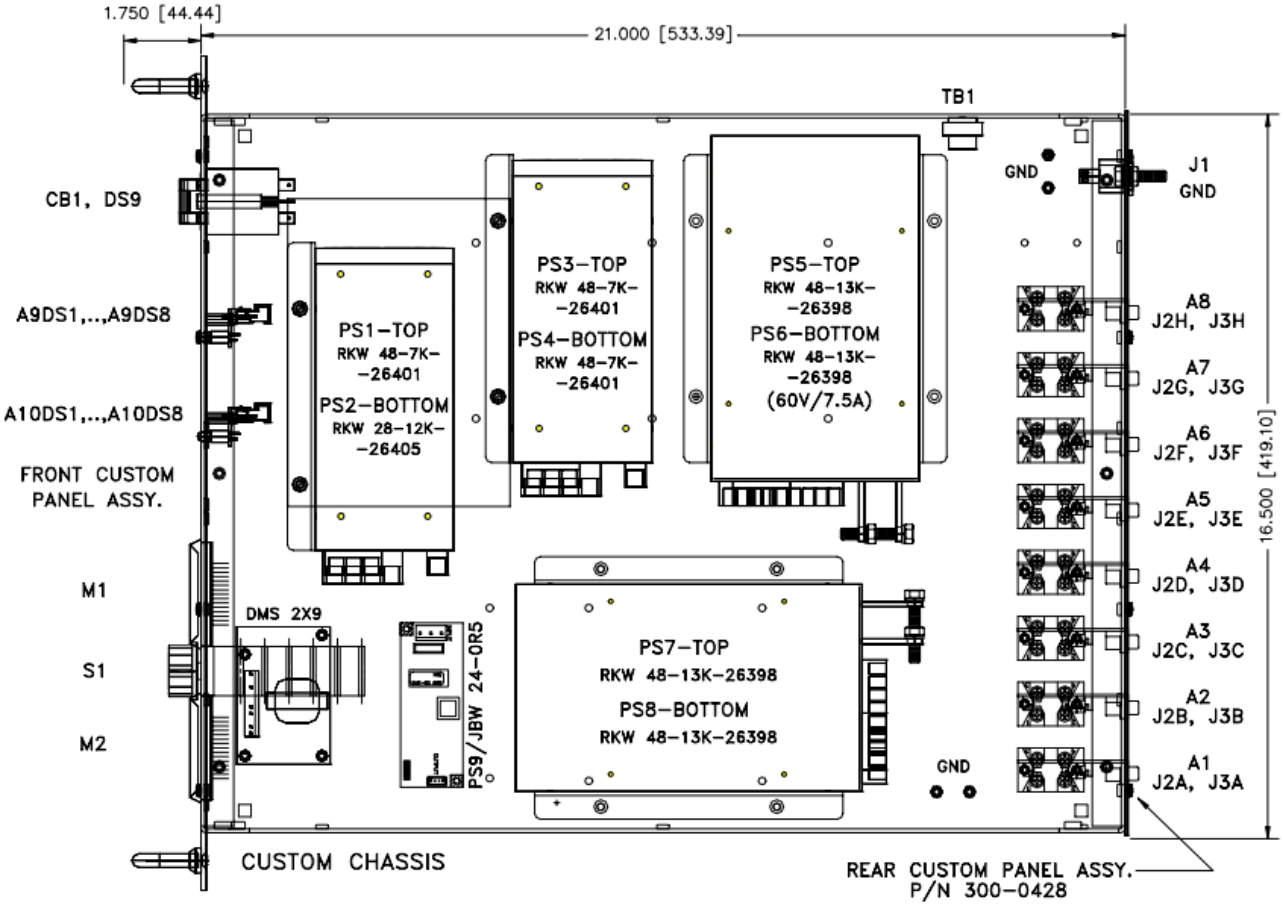
Table 3 lists the functions assigned to the pins of the Control Interface Connectors J3-A through J3-H.

TABLE 3. OUTPUT CONNECTOR J3 PIN FUNCTIONS (TYP)

CONNECTOR	PIN	FUNCTION
J3A-J3H (AMP 747846-3)	1	ENABLE (+24 VDC)
	2	ENABLE (0 VDC) RETURN
	6	PS OK RETURN
	7	Iout MONITOR
	10	Iout SETPOINT
	12	Iout SETPOINT/MONITOR RETURN
	17	PS OK
	22	Vout MONITOR
	23	Vout MONITOR RETURN

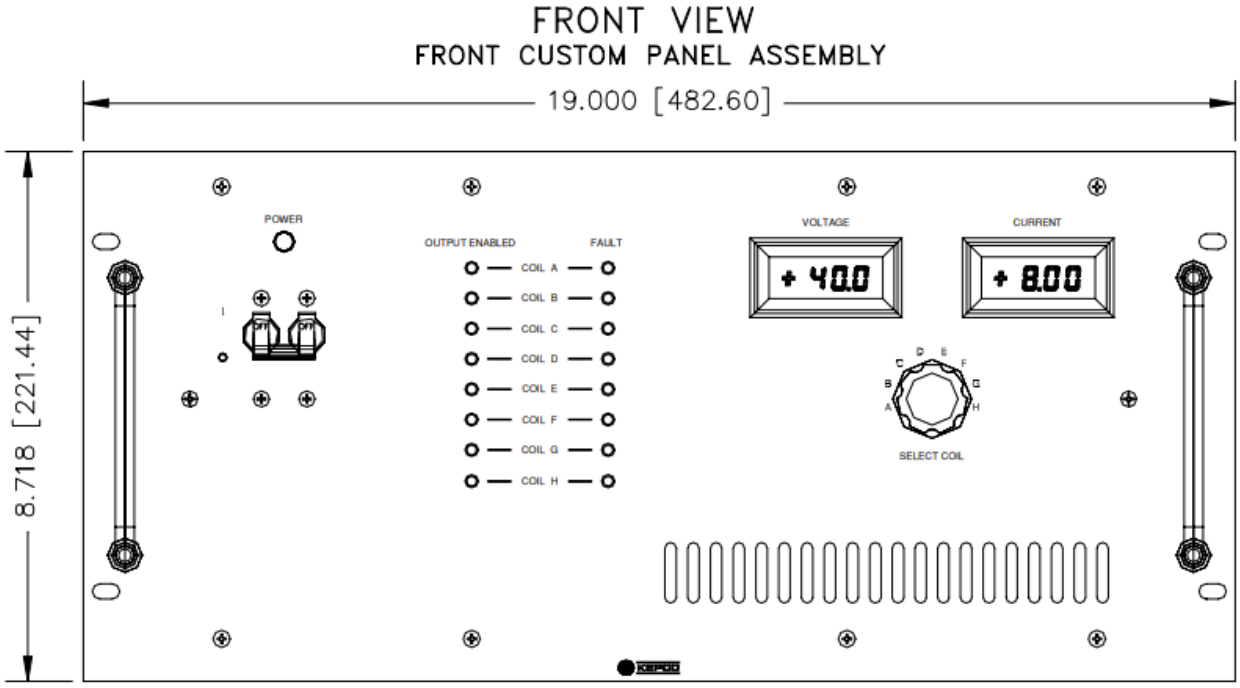
Cooling

The components contained in the Power Supply System 26372 are maintained within their operating temperature range by means of vents in the front panel and cover.
Power Supply System 26372 MUST BE KEPT CLEAR FROM OBSTRUCTIONS TO ENSURE PROPER AIR CIRCULATION. If the equipment is installed in confined spaces, care must be taken to ensure that the ambient temperature (the temperature immediately surrounding the Power System 26372) does not rise above the limits specified in the associated power supply manual. Enough space must be provided around the rack adapter to allow the hot air to exhaust from the equipment inside the equipment rack.



TOP VIEW (COVER REMOVED)

FIGURE 1. MODEL 26372 LAYOUT, TOP VIEW



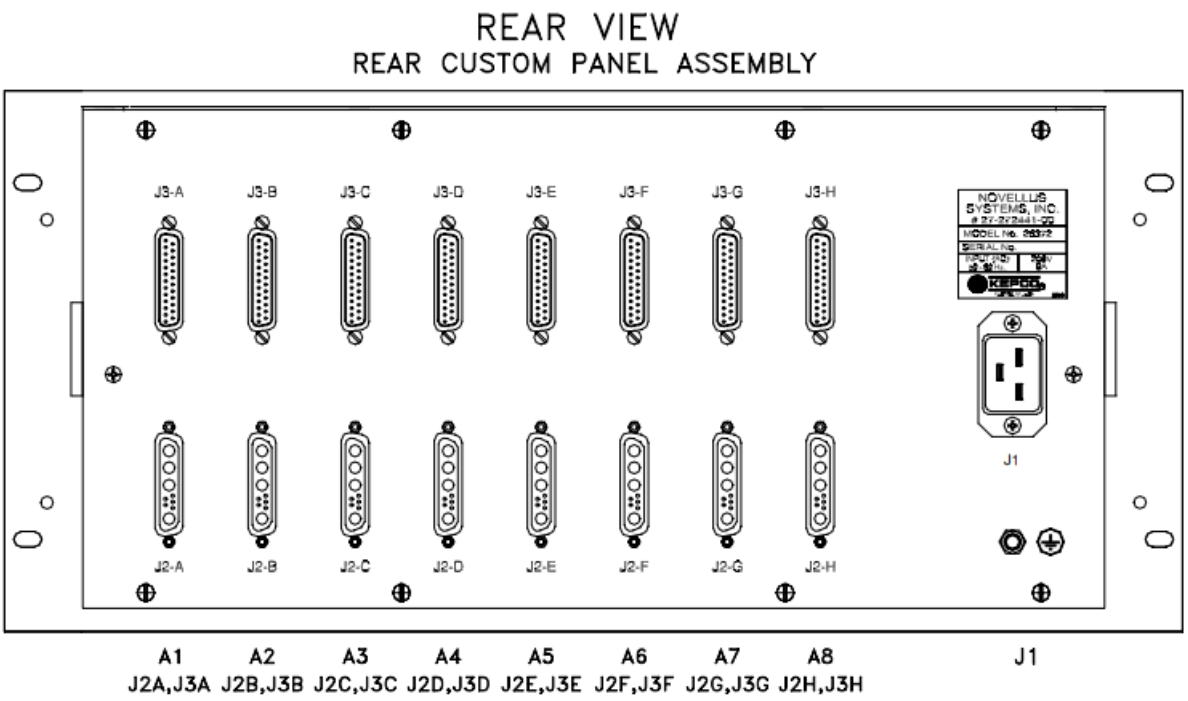


FIGURE 2 MODEL 26372 LAYOUT, FRONT AND REAR VIEW

REPLACEMENT PARTS LIST

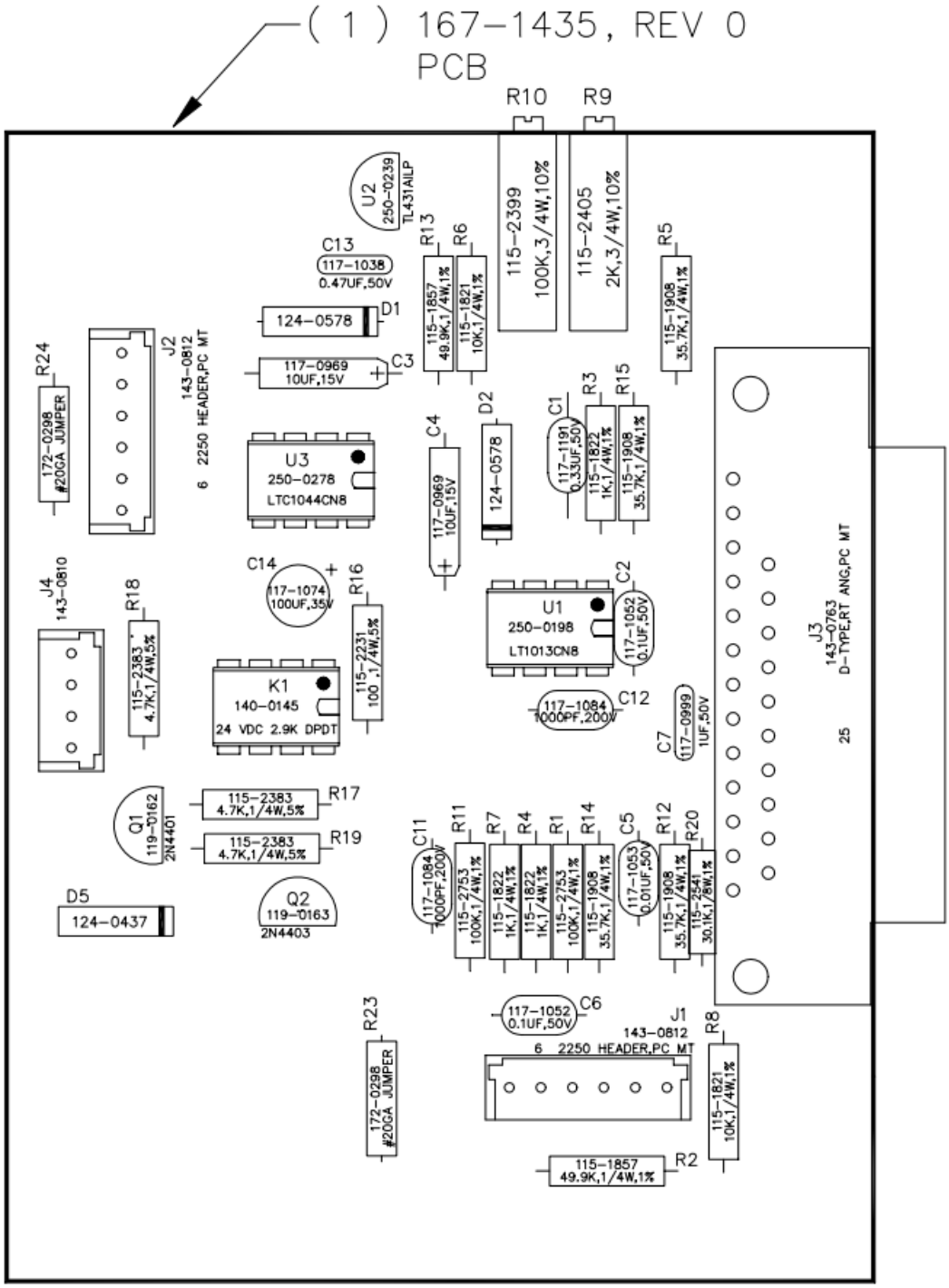
REFERENCE DESIGNATOR	QTY.	DESCRIPTION	MFRS. NAME & PART NO. (SEE BOTTOM NOTE)	KEPCO PART NO	REC. SPARE PART QTY.
PS1, 3, 4	3	3 POWER SUPPLY	KEPCO, INC. 0026401	RKW 48-7K26401	1
PS2	1	1 POWER SUPPLY	KEPCO, INC. 0026405	RKW 28-12K26405	1
PS5, 6, 7, 8	4	4 POWER SUPPLY	KEPCO, INC. 0026398	RKW 48-13K26398	1
PS9	1	1 POWER SUPPLY	KEPCO, INC. JBW 24-0R5	JBW 24-0R5	1
N.A.	1	1 ACCESSORY POWER SUPPLY	KEPCO, INC. DMS 2X9	DMS 2X9	1
N.A.	1	1 FRONT PANEL ASSEMBLY (SEE SEPARATE PARTS LIST)	KEPCO, INC. 131-6281	131-6281	1
N.A.	1	1 AC INPUT/DC OUTPUT PANEL (SEE SEPARATE PARTS LIST)	KEPCO, INC 300-0428	300-0428	1
TB1	1	1 TERMINAL BLOCK, 20 TERM.	SPEEDLINE TECH TYPE KL16/20PA	167-0997	1
RN1	1	1 RES., NETWORK 999K/1K	DALE PTF 65 & 56	234-0030	1
RL1	1	1 RES., FIXED MOLDED 100K, 5%, 1W	RCD COMPONENTS, INC. TYPE CF100	115-0035	1

NOTE: REPLACEMENT PARTS MAY BE ORDERED FROM KEPCO, INC. ORDERS SHOULD INCLUDE KEPCO PART NUMBER AND DESCRIPTION.
PLEASE NOTE: THE MANUFACTURER'S NAME AND PART NUMBER LISTED FOR EACH ITEM ON REPLACEMENT PARTS LISTS REPRESENTS AT
LEAST ONE SOURCE FOR THAT ITEM AND IS LISTED SOLELY FOR THE CONVENIENCE OF KEPCO EQUIPMENT OWNERS IN OBTAINING
REPLACEMENT PARTS LOCALLY. WE RESERVE THE RIGHT TO USE EQUIVALENT ITEMS FROM ALTERNATE SOURCES. KEPCO, INC.

REFERENCE DESIGNATOR	QTY.	DESCRIPTION	MFRS. NAME & PART NO. (SEE BOTTOM NOTE)	KEPCO PART NO.	REC. SPARE PART QTY.
FRONT PANEL ASSEMBLY (PN 131-6281)					
CB1	1	CIRCUIT BREAKER TWO POLE, 15 AMPS	AIRPAX R11-62F-15.0A-B121-EV.00	127-0426	1
DS9	1	LED INDICATOR, RED	IND. DEVICE 2180A13	152-0087	1
A9	1	PCB ASSEMBLY, 8 GN LEDS (SEE SEPARATE PARTS LIST)	KEPCO, INC. 236-2440	236-2440	1
A10	1	PCB ASSEMBLY, 8 RD LEDS (SEE SEPARATE PARTS LIST)	KEPCO, INC. 236-2441	236-2441	1
M1, M2	2	DVM	KEPCO, INC. 135-0556	135-0556	1
S1	1	SWITCH, 8 POS.	KEPCO, INC. 127-0516	127-0516	1
A9, PCB ASSEMBLY (PN 236-2440)					
R1 THRU R8	8	JUMPER, MOLDED #20 GA	YAGEO ZOR-25R52-0R	172-0298	1
DS1 THRU DS8	8	LED, GREEN	HEWLETT PACKARD HLMP 3507	153-0094	1
A10, PCB ASSEMBLY (PN 236-2441)					
R1 THRU R8	8	JUMPER, MOLDED #20 GA	YAGEO ZOR-25R52-0R	172-0298	1
DS1 THRU DS8	8	LED, RED	HEWLETT PACKARD HLMP 3301	153-0092	1
REAR PANEL ASSEMBLY (PN 300-0428)					
J1	1	SOCKET, AC INLET IEC320, 16A/250VAC	SHURTER 4798.9200	143-0471	1

J2A THRU J2H	8	RECEPTACLE, PANEL MO UNT 9C4 ARRANGEMENT, 9 PI N.	AMP 212502-1	143-0691	1
A1 THRU A8	8	PCB ASSEMBLY, I/O CON TROL/ INTERFACE CONNECTOR S (SEE SEPARATE PARTS L IST)	KEPCO, INC. 236-2444	236-2444	1

NOTE: REPLACEMENT PARTS MAY BE ORDERED FROM KEPCO, INC. ORDERS SHOULD INCLUDE KEPCO PART NUMBER AND DESCRIPTION.
PLEASE NOTE: THE MANUFACTURER'S NAME AND PART NUMBER LISTED FOR EACH ITEM ON REPLACEMENT PARTS LISTS REPRESENTS
AT LEAST ONE SOURCE FOR THAT ITEM AND IS LISTED SOLELY FOR THE CONVENIENCE OF KEPCO EQUIPMENT OWNERS IN OBTAINING
REPLACEMENT PARTS LOCALLY. WE RESERVE THE RIGHT TO USE EQUIVALENT ITEMS FROM ALTERNATE SOURCES. KEPCO, INC.



PCB ASSEMBLY (A1 THROUGH A8) (Figure 3)

REFERENCE DESIGNATOR	QTY.	DESCRIPTION	MFRS. NAME & PART NO. (SEE BOTTOM NOTE)	KEPCO PART NO.	REC. SPARE PART QTY.
R2, R13	2	RES., FIX., PRECISION, METALFILM, 49.9 KOHM, 1/4W, 1%	IRC, INC. CES RN60D4992F	115-1857	1

R6, R8	2	RES., FIX., PRECISION, METALFILM, 10 KOHM, 1/4W, 1%	VISHAY DALE ELEC. CCF-55 1002 F R36	115-1821	1
R16	1	RES., FIX., PRECISION, METALFILM, 100 OHM, 1/4W, 1%	IRC, INC. CF-1/4-101-J	115-2231	1
R17, R18, R19	3	RES., FIX., CARBON FILM, 4.7 KOHM, 1/4W, 5%	IRC, INC. CF-1/4 472 J T&R	115-2383	1
R20	1	RES., FIX., PRECISION, METALFILM, 30.1 KOHM, 1/8W, 1%	VISHAY DALE ELEC. TYPE MFF 1/8	115-2541	1
R3, R4, R7	3	RES., FIX., PRECISION, METALFILM, 1 KOHM, 1/4W, 1%	IRC, INC. GP55 100 1001 F T&R	115-1822	1
R9	1	RES., VAR., MULTITURN, COMP. OR CERM., 2 KOHM, 3/4W, 10%	BOURNS INCORPOR 3009P-1-202	115-2405	1
R23, R24	2	MOLDED JUMPER 1/4W FILM RESISTOR SIZE	YAGEO ZOR-25 RSS 0R	172-0298	1
U1	1	I.C. DUAL PRECISION OPER. 8 PIN DIP	LINEAR TECH. LT1013CN8	250-0198	1
U2	1	I.C. ADJ. REFERENCE (2.5-37V) 600UA-100MA	TEXAS INSTRUMENTS TL431AILPR	250-0239	1

U3	1	I.C. SWITCHED CAPACITOR VOLTAGE CONVERTER	LINEAR TECH LTC1044CN8	250-0278	1

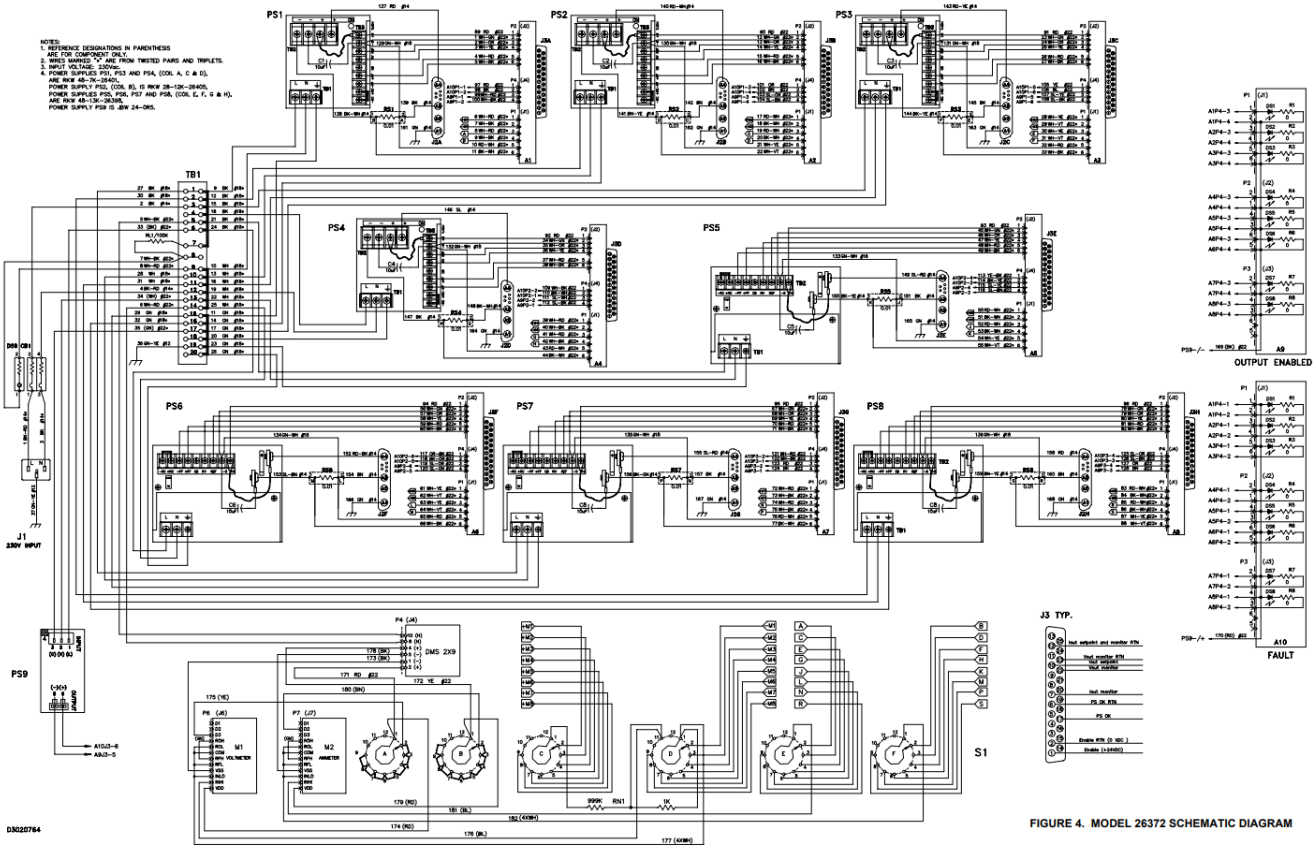
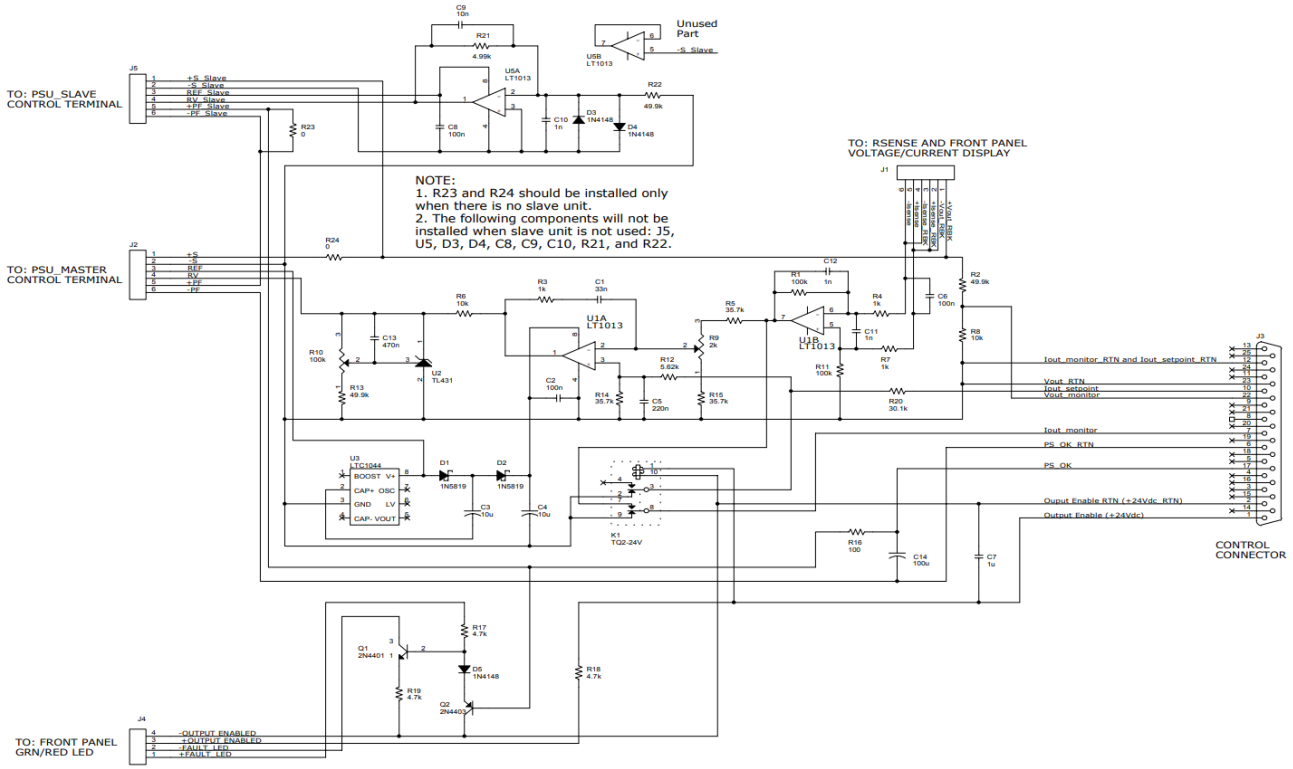


FIGURE 4. MODEL 26372 SCHEMATIC DIAGRAM



NOTE: REPLACEMENT PARTS MAY BE ORDERED FROM KEPCO, INC. ORDERS SHOULD INCLUDE KEPCO PART NUMBER AND DESCRIPTION.

PLEASE NOTE: THE MANUFACTURER'S NAME AND PART NUMBER LISTED FOR EACH ITEM ON REPLACEMENT PARTS LISTS REPRESENTS AT LEAST ONE SOURCE FOR THAT ITEM AND IS LISTED SOLELY FOR THE CONVENIENCE OF KEPCO EQUIPMENT OWNERS IN OBTAINING REPLACEMENT PARTS LOCALLY. WE RESERVE THE RIGHT TO USE EQUIVALENT ITEMS FROM ALTERNATE SOURCES. KEPCO, INC.

Documents / Resources

	KEPCO 26372 Eight Output Power Assembly [pdf] Instruction Manual 26372, 26372 Eight Output Power Assembly, Eight Output Power Assembly, Output Power Assembly, Power Assembly