REMOVAL / INSTALLATION

MANUAL

MODEL
LT-52A

28 Vdc to 0-5Vdc/ 0-10 Amps
LIGHT DIMMER POWER SUPPLY

FAA TSO-C71

Dwg. No. 36006- 4 Rev. R

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RECORD OF REVISION

REV.	ECO #	BRIEF DESCRIPTION	DATE	BY
NR	–	No change, original issue	APR/76	TI
1	–	–	–	–
2	–	–	–	–
3	–	–	–	–
4	–	–	APR/80	TI
5	–	–	MAR/92	TI
6	–	–	DEC/93	TI
7	–	–	JAN 14/94	TI
G	1301	Standardize & Computerize	AUG/23/94	NB
H	1633	FAA TSO-C71 Added & Format Change	JUN 28/96	PT
I	1769	Removed FAA-PMA from Title Page	APR 17/97	PT
J	2026	Update page seq.; was 818, is 626 area code	JUN 30/99	EL
K	2350	Add Instruction for Airworthiness	JAN 22/02	EL
L	2637	Height was 2.30in ; other changes	APR 02/04	TI
M	2656	Env Cat for DO-160B added	MAY 24/04	TI
N	2672	Update dim at page 202	JUN 22/04	TI
P	2943	New pages Format & see ECO#2943	JULY 26/06	TI
R	3275	Updated on pages 7, 10 & 11	MAY 04/09	HT

NOTE:

1. The latest revision letter governs the revision of this R/I Manual.

LIST OF EFFECTIVE PAGES

PAGE NO.	ISSUE DATE	REV.	REVISION DATE	INSERTION DATE
1	APR 07/1976	R	MAY 04/2009	MAY 04/2009
2	APR 07/1976	R	MAY 04/2009	MAY 04/2009
3	APR 07/1976	R	MAY 04/2009	MAY 04/2009
4	APR 07/1976	R	MAY 04/2009	MAY 04/2009
5	APR 07/1976	P	JULY 26/2006	JULY 26/2006
6	APR 07/1976	P	JULY 26/2006	JULY 26/2006
7	APR 07/1976	R	MAY 04/2009	MAY 04/2009
8	APR 07/1976	P	JULY 26/2006	JULY 26/2006
9	APR 07/1976	P	JULY 26/2006	JULY 26/2006
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FIGURES

1. INTRODUCTION

A. Purpose of Manual

The purpose of this manual is to provide removal/installation instructions for KGS ELECTRONICS Model LT-52A, a 28 Vdc to 0-5 Vdc, 0-10 Amps Light Dimmer Power Supply.

B. Purpose of Equipment

The equipment is primarily designed to power a 5 volt incandescent lamp load for airborne/ground instruments, navigation and electronic systems.

C. Description

The equipment identified as KGS Model LT-52A is a 28 Vdc to 0-5 Vdc Light Dimmer Power Supply, capable of delivering 50 watts of continuous power to incandescent lamp or similar type loads up to 10 Amps.

Output voltage 0-5 Vdc is controlled by an external 5 Kohm rheostat to ground at pin D as shown in Figure 2. An internal trim pot is provided to adjust the output voltage within the range from 5 Vdc to 5.5 Vdc at its full clockwise position (maximum resistance) of the external 5 Kohm rheostat.

The light dimmer power supply will deliver full output power even though the external 5 Kohm rheostat is removed.

Control circuitry includes use of popular discrete integrated circuits to control PWM for voltage regulation and overload current limit. Protection circuitry includes, output overvoltage limit and output short circuit current limit.

D. Technical Characteristics (SPECIFICATION)

INPUT

Voltage:	Rated Voltage: 28Vdc Normal Range: 20Vdc to 40Vdc
Transient:	Withstands 80 volts 1mSec transient on 28 Vdc line
Current:	2.4 Amps typical @ 28 Vdc input voltage & at full load 100 mA maximum at no load 50 mA maximum with zero ohm control pot setting

OUTPUT

Voltage:	0 – 5Vdc regulated. Adjustable –0V, +5V via an internal trim pot
Current:	0 – 10 Amp Continuous
Power:	50 Watts
Ripple:	50 mVpp maximum
Regulation:	2% for line, 3% for load and 3% for temperature
Control:	Output voltage 0-5 Vdc is controlled by an external 5Kohm rheostat to ground
Overload(OL):	Deliver 110% output current for 2 hours
Short Circuit:	Output current is limited to 15 Amp maximum
Protection(OL):	Withstand without damage or degradation load exceeding 110% to an output short circuit. Unit delivers rated output power upon removal of the above overload (OL) conditions.
Protection(SC):	Under the short circuit (SC) condition, the input and output current fold back and the total output currents are limited to a safe value.
Protection(OV):	Output overvoltage (OV) is limited to 6.5Vdc max.

EFFICIENCY:	75 % typical
TEMPERATURE:	–65°F to + 160°F (–55°C to + 71°C)
ALTITUDE:	55,000 feet
COMPLIANCE:	FAA TSO-C71 DO-160B Env Cat.: D2BRXXXXXXXXXXZ DO-160C Env. Cat.: F2-BB(LV)XXXDFSAAAXXXZKXX
FINISH:	Gold zinc plating Type II per ASTM-B633 and black paint
WEIGHT:	1.5 LBS (681 grams)
SIZE:	2.25 H x 2.25 W x 5.75 L inches 57.2 H x 57.2 W x 146.1 L mm Less protrusion of connector and screw heads

2. INSTALLATION

A. General Information

The Model LT-52A, hereinafter referred to as the Unit, is ready to install when delivered from the factory.

The outline and mounting dimensions of the Unit are illustrated in Figure 1. A suggested external hook-up for the Unit is illustrated in Figure 2.

B. Selection of Mounting Area

The Unit should not be installed in an area where the ambient air temperature exceeds +160°F (+71°C) under all weather and operating conditions.

The Unit must be mounted directly to metallic plates or supports of adequate heat sink to maintain the bottom plate of the Unit at +167°F (+75°C) or lower in all thermal operating conditions.

C. Installation Procedure

Mounting hardware is not normally supplied with the Unit. The screw size is a #8-32 and length must be long enough to have minimum of 1 1/2 threads exposed after installing the necessary hardware. A #8 flat washers should be placed under the head of the screws.

The Unit mating connector P1 is KPT06A14-5S or MS3126F14-5S or the equivalent. The Power Supply receptacle J1 is KPT02A14-5P.

A wire size #16 AWG is suggested for input lead, #14 AWG for output lead and common dc return lead and a #24-#20 AWG for the control lead. Input to the Unit shall be protected with a MIL-C-5809, 3 Amp to a 5 Amp circuit breaker.

D. Operating Instruction

Prior to applying input power of +28 Vdc to the Unit, check the connection of the load and control rheostat per the hook-up diagram Figure 2. To operate the Unit, apply a +28 Vdc to pin A and the negative return to pin B via a circuit breaker as shown in Figure 2. Turn the rheostat clockwise to increase the output toward 5 Vdc and counter-clockwise to decrease the output toward 0 Vdc.

E. Operating Limitation

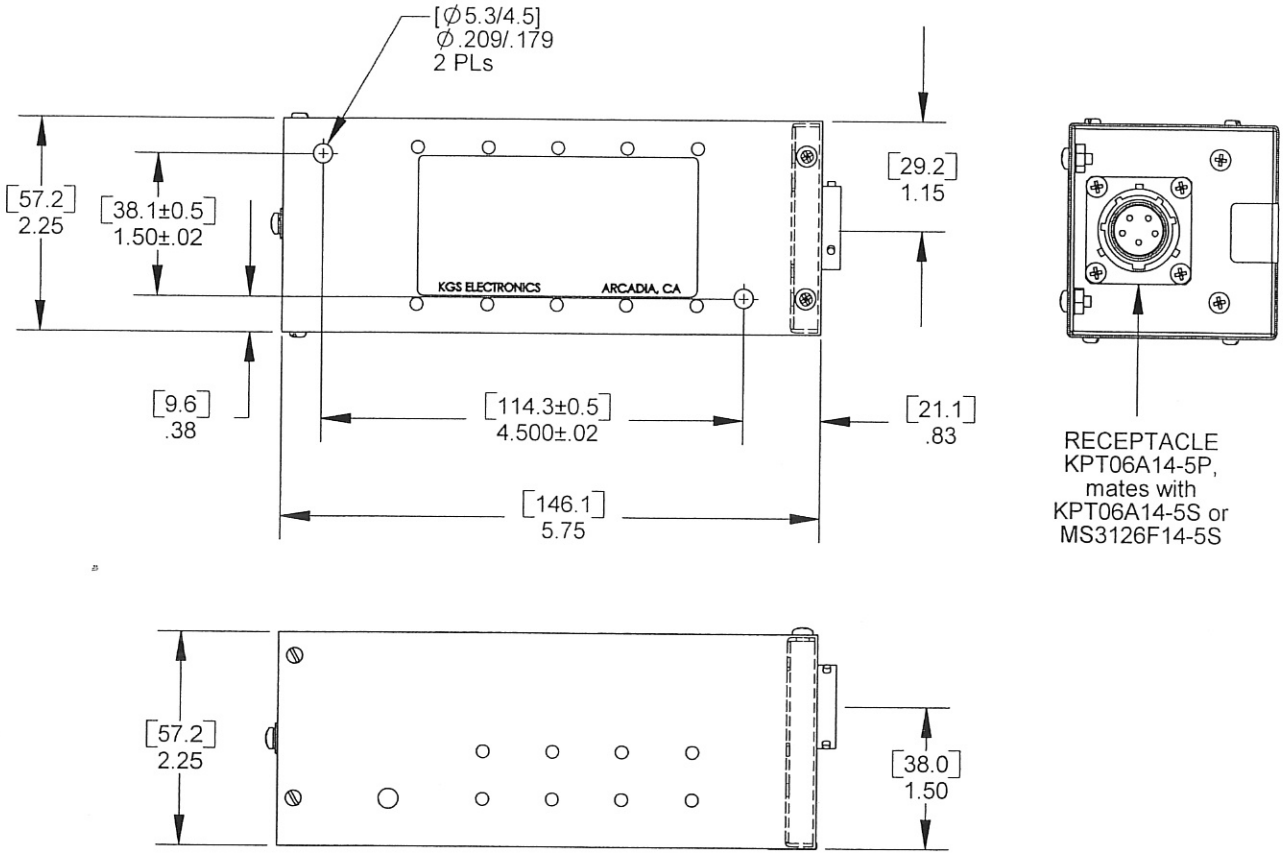
Unit must be installed and operated within the limiting conditions of the above installation procedure, electrical specifications and environmental categories specified in this manual.

F. Instruction for Maintenance

No regular periodic maintenance is required for this product. Service is required only when a malfunction is detected. Maintenance consists of removal and replacement.

G Airworthiness Limitation

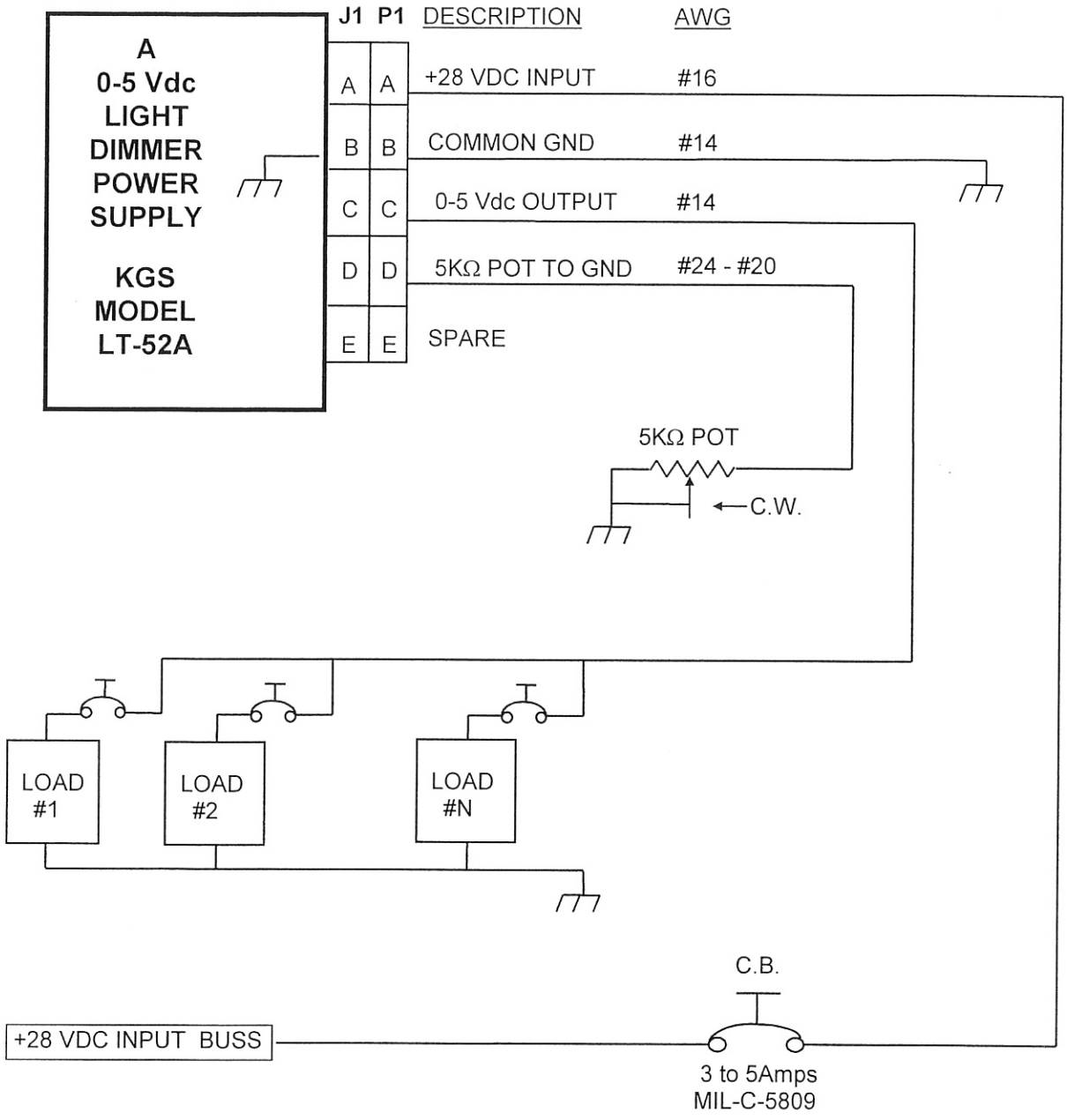
The Airworthiness Limitation Section is FAA approved and specifies maintenance required under 14 CFR 43.16 and 91.403 unless an alternative program has been FAA approved. There are no airworthiness limitation for this unit.



NOTES:

1. Dimensions are [mm]-inches.
2. Dimensional tolerance is ±.06 in.(±1.52mm) unless specified.
3. The dimensions shown do not include the protrusion of screw heads and the connector.

Figure 1 Outline and Mounting Dimensions



NOTES:

1. Input circuit breaker should be selected based on actual loading & external input wire length/size.
2. The rating for each protective element should rupture in the event of output overload or short.
3. J1 mates with KPT06A14-5S or MS3126F14-5S or equivalent.

Figure 2 Suggested Hook - Up

3. REMOVAL

A. Turn off and disconnect the input power source.

B. Unscrew and disconnect the mating plug from the unit.

C. Unscrew the #8-32 (2 PL's) mounting screws and remove the unit.

D. Clean the unit and store it in a cool and dry place.

4. HOW TO RETURN MATERIAL AND EQUIPMENT

If any material and equipment is to be returned to the factory, under warranty or otherwise, KGS ELECTRONICS must be notified prior to shipment with the following information:

A. Model and serial number of equipment being returned.

B. Date purchased.

C. Date placed in service.

D. Number of hours in service.

E. Nature and cause of failure.

F. Remarks, if any.

Upon receipt of such notice, KGS ELECTRONICS will issue a Return Material Authorization (RMA) number, which then authorizes return of the material and equipment to the following address:

Service Department:
KGS ELECTRONICS
418 East Live Oak Avenue
Arcadia, CA 91006-5619
(U.S.A.)

Telephone No.: (626) 574-1175
Facsimile No. : (626) 574-0553
Internet: www.kgselectronics.com

Failure to obtain a RMA number and provide the details listed above may cause unnecessary delay and/or rejection of the returned material and equipment.

All material and equipment returned to the factory must be **freight prepaid.** Acceptable methods of shipment for international return are *Airborne, Burlington Air, DHL, Emery, FedEx, UPS. For International,* and *World Wide* only, **DO NOT** use "International Commercial Airline" as such carriers may cause a **loss of returned material and equipment.**