



JUPITER AVIONICS
CORPORATION

JLD-001

Panel Mounted Light Dimmer



Installation and Operating Manual

Rev A

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IMPORTANT:

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To confirm the current revision status of this manual, visit the JAC website:
www.jupiteravionics.com

RECORD OF REVISIONS			
Revision	Rev Date	Description	ECR
A	Apr 2023	Initial release, Serial number 1001 and higher.	8394



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JLD-001 Panel Mounted Light Dimmer

SECTION 1 - DESCRIPTION

1.1 System Overview

The JLD-001 Panel Mounted Light Dimmer provides an adjustable output voltage from +2.5Vdc to +28Vdc with a maximum current of 2.0A.

The JLD-001 can be mounted in any orientation.

1.2 Features Overview

The JLD-001 faceplate has a baked-on flat black urethane finish to resist scratches and nicks during use.

The JLD-001 provides up to 56 Watts of output dimming power in a compact unit.

The JLD-001 supports a single control to adjust the light dimmer output voltage.

1.3 Inputs and Outputs

Refer to the JLD-001 [connector map](#) for the mating connector designators and pin assignments for the input and output signals.

1.3.1 Inputs

Name	Qty	Type
POWER INPUT	2	+ 28 Vdc power

1.3.2 Output

Name	Qty	Type
LIGHT DIMMER	2	Light Dimmer output

1.3.3 Grounds/Spares

Name	Qty	Type
POWER GROUND	1	Power Ground
CHASSIS GROUND	1	Chassis Ground
SPARES	3	Spares

1.4 Specifications

1.4.1 Electrical Specifications

Power Input

Primary nominal voltage	28.0 Vdc
Maximum voltage	32.2 Vdc
Minimum voltage	22.0 Vdc
Emergency voltage	18.0 Vdc
Power Input - Off	≤ 15 Vdc
Input current at 28 Vdc	2.5 A max



1.4.1.1 Power Output Performance

Output rated current at +28 Vdc	2.0 A
Output rated voltage	+28 Vdc \pm 5 %
Output capable of \geq 110 % of rated power for	\geq 2h
Regulation at +28 Vdc	\leq 12 %
Ripple	\leq 5 mVpp
Short circuit	\geq 1 min
Output rated load at +28 Vdc	14 Ω \pm 10%
Output rated power at +28 Vdc	56 W max
Dielectric strength	Not Applicable

1.4.2 Mechanical Specifications

Diameter	1.86 in (47.2 mm) max
Behind panel diameter	1.83 in (46.5 mm) max
Behind panel depth (not including connectors)	1.41 in (35.8 mm) max
Faceplate thickness	0.22 in (5.6 mm) max
Weight	0.27 lbs. (0.12 kg) max
Material	6061 aluminum with flat black Urethane paint
Connectors:	J1 Main One 9-pin D-Sub male, V5 locking
Mounting	2 x 4-40 countersunk fasteners
Bonding	\leq 2.5 m Ω
Installation kit part number	INST-JLD

1.4.3 Flammability of Materials

The JLD-001 complies with the requirements of RTCA/DO-160G Sec 26.3.3 "Flammability", through equivalent flammability testing of materials and the Small Parts Exemption.



JLD-001 Panel Mounted Light Dimmer

SECTION 2 – INSTALLATION

2.1 Introduction

This section contains unpacking and inspection procedures, installation information, and post-installation checks.

2.2 Continued Airworthiness

Maintenance of the JLD-001 is on condition only. Scheduled inspection and/or periodic maintenance of this unit are not required.

2.3 Unpacking and Inspecting Equipment

Unpack the equipment carefully. Check for shipping damage and report any problems to the relevant carrier. Confirm that the Authorized Release Certificate or Certificate of Conformance is included. Complete the on-line warranty card from the Jupiter Avionics Corporation (JAC) website - www.jupiteravionics.com/warranty

2.3.1 Warranty

This product manufactured by JAC is warranted to be free of defects in workmanship or performance for 2 years from the date of installation by an approved JAC dealer or agency. This warranty covers the cost of all materials and labour to repair or replace the unit, but does not include the cost of transporting the defective unit to and from JAC or its designated warranty repair centre, or of removing and replacing the defective unit in the aircraft. This warranty does not cover failures due to abuse, misuse, accident, or unauthorized alteration or repairs.

THIS WARRANTY IS VOID IF THE PRODUCT IS NOT INSTALLED BY AN AUTHORIZED JAC DEALER. If the on-line warranty card is not completed, the product will be warranted from the date of manufacture.

Contact JAC for return authorization, and for any questions regarding this warranty and how it applies to your unit(s). JAC is the final arbiter concerning warranty issues.

2.4 Installation Procedures



CAUTION: The power input circuitry of the unit may be damaged if the installation does not conform to the wiring instructions in this manual.

2.4.1 Installation Limitations

Those installing the JLD, on or in a specific type or class of aircraft, must determine that the aircraft installation conditions meet standards. The JLD may be installed only by following the applicable airworthiness requirements.

2.4.2 Cabling and Wiring

All wire shall be selected in accordance with the original aircraft manufacturer's maintenance instructions, or AC43.13-1B Change 1, Paragraphs 11-76 through 11-78. Unshielded wire types shall qualify to MIL-W-22759 as specified in AC43.13-1B Change 1, Paragraphs 11-85, 11-86, and listed in Table 11-11. Follow the Connector Map in Appendix A of this manual.

Note that this unit has a 'clamshell' hood that is installed after the wiring is complete.

Maintain wire segregation and route wiring in accordance with the original aircraft manufacturer's maintenance instructions.



Unless otherwise noted, all wiring shall be a minimum of 20 AWG. Refer to the Interconnect drawing for additional specifications.

2.4.3 Mechanical Installation

The JLD-001 can be mounted in any attitude and location with adequate space for the front panel and sufficient clearance for the connector and wiring harness. It requires no direct cooling.

2.4.4 Post Installation Checks

2.4.4.1 Voltage/Resistance checks

Do not attach this unit until the following conditions are met:

- a) Check P1 pins **1** and **2** for +28 Vdc relative to ground.
- b) Check P1 pin **6** (power ground) for continuity to ground (less than 0.5 Ω).
- c) Check P1 pin **7** (chassis ground) for continuity to ground (less than 0.5 Ω).
- d) Check all pins for shorts to ground or adjacent pins.

2.4.4.2 Power on Checks

Power up the aircraft's systems and confirm normal operation of all functions of the JLD. Refer to Section 3 (Operation) for specific operational details.

When all performance checks are satisfied, complete the necessary regulatory documentation before releasing the aircraft for service. Refer to Appendix B.

2.5 Installation Kit

The kit required to install this unit is not included with the unit.

The installation kit (Part # INST-JLD) consists of the following:

Quantity	Description	JAC Part #
1	D-Sub 9-pin connector, hood and 9 crimp pins	CON-3420-0009
1	JLD Assembly Notes, Installation Kit	DOC-INST-JLD

2.5.1 Recommended Crimp tools

Standard D-Sub Crimp Tool Chart			
Tool Type	Hand crimping tool	Positioner	Insertion/extractor tool
POSITRONIC	9507-0-0-0	9502-5-0-0	4711-2-0-0
DANIELS	AFM 8	K13-1	91067-2
MIL-SPEC	M22520/2-01	M22520/2-08	M81969/1-02

2.6 Installation Drawings

The drawings and documents required for Installation can be found in Appendix A of this manual.



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SECTION 3 – OPERATION

3.1 Introduction

This section contains the operating instructions for the JLD-001.

3.2 Front Panel Control



The JLD-001 is a panel mounted unit that allows the user to adjust the light dimmer output voltage and thus the aircraft instrument lighting.

Rotating the control clockwise (cw) will increase the lighting voltage, and counter clockwise (ccw) will reduce it.



Installation and Operating Manual

Appendix A - Installation Drawings

A1 Introduction

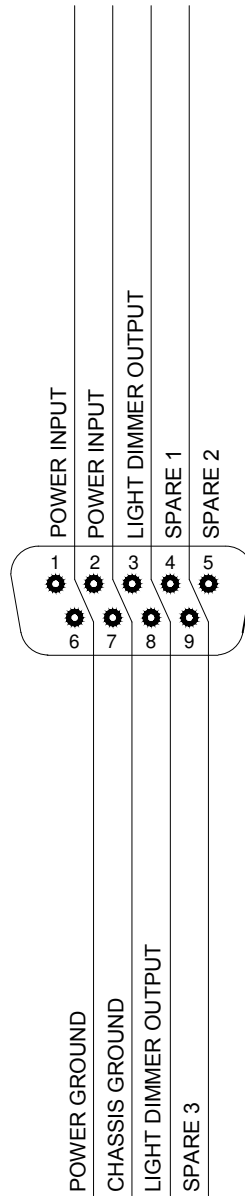
The drawings necessary for installation and troubleshooting of the JLD-001 Panel Mounted Light Dimmer are in this Appendix, as listed below.

A2 Installation Drawings

DOCUMENT	Rev
JLD-001 Connector Map	A
JLD-001 Interconnect	A
JLD-001 Mechanical Installation	A

MAIN CONNECTOR

P1
 9 PIN FEMALE DMIN
 MATING CONNECTOR



VIEW IS FROM REAR OF MATING CONNECTOR




PREPARED	KV	JUPITER AVIONICS <small>CORPORATION</small>		
CHECKED	 03-07-24 AH	TITLE PANEL MOUNT LIGHT DIMMER P1 - Main Connector		
APPROVED	 03-07-24 KDV	NCAGE CODE L00N3	PART NO. JLD-001	SHEET 1/1
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO. JLD-001 Connector Map Rev A		

JLD-001 INTERCONNECT WIRING NOTES

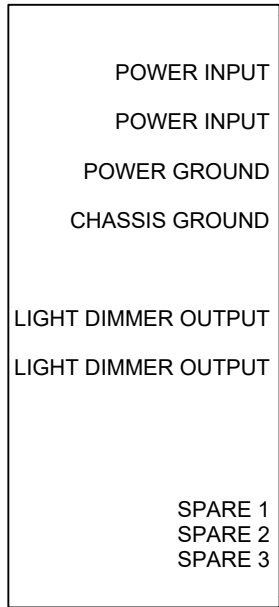
NOTES

1. ALL WIRE SIZE SHOULD BE 22 AWG MIN UNLESS OTHERWISE SPECIFIED. UNSHIELDED WIRE SHOULD BE SELECTED PER FAA AC43.13-1B CHANGE 1 PARA 11-76 TO 11-78. WIRE TYPES SHOULD BE IN ACCORDANCE WITH MIL-W-22759 AS DESCRIBED IN FAA AC43.13-1B CHANGE 1 PARA 11-85 AND 11-86 AND LISTED IN TABLE 11-11 OR 11-12. ALL SHIELDED CABLE SHOULD BE IN ACCORDANCE WITH MIL-DTL-27500 (REVISION H OR LATER).

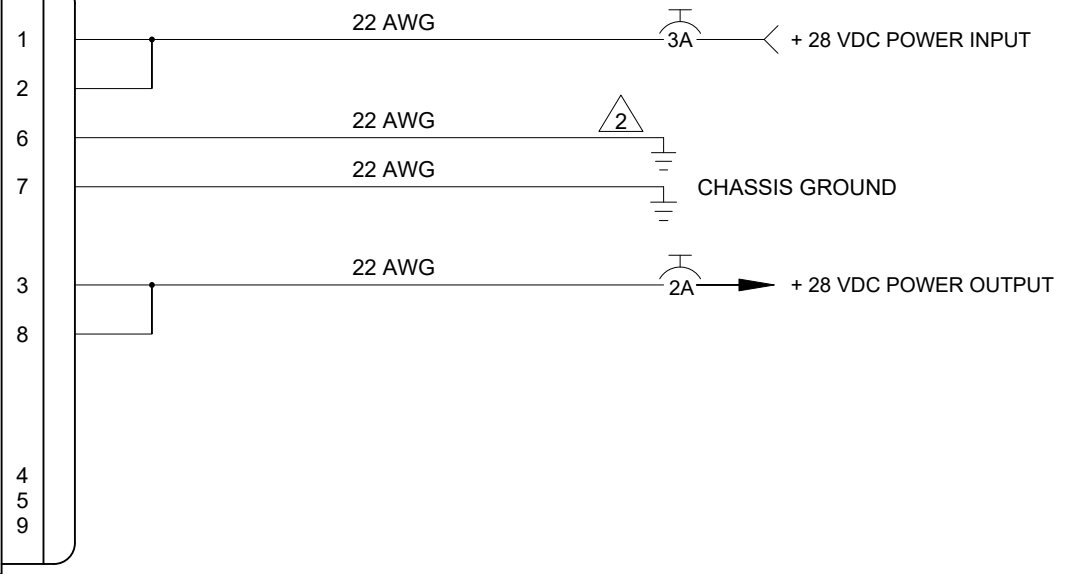
- △₂ CONNECTION TO AIRFRAME GROUND SHOULD BE MADE WITH 22 AWG WIRE. LENGTH NOT TO EXCEED 3 FT (0.91 M).




PREPARED	TAT			
CHECKED				
APPROVED		NCAGE CODE L00N3	PART NO. JLD-001	SHEET 1/2
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO. JLD-001 Interconnect Rev A.dwg		

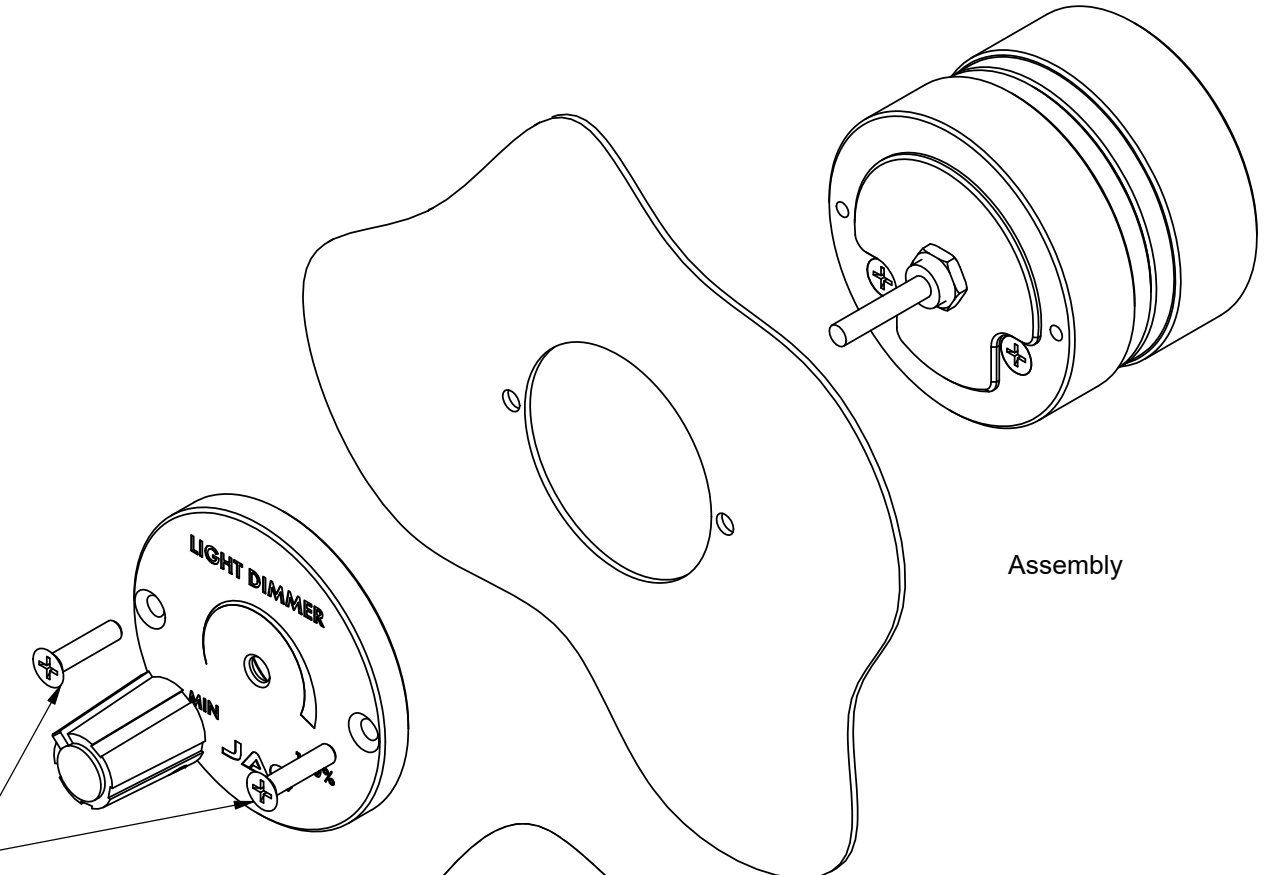
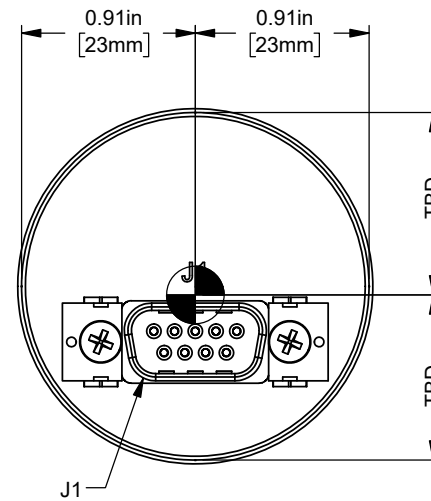
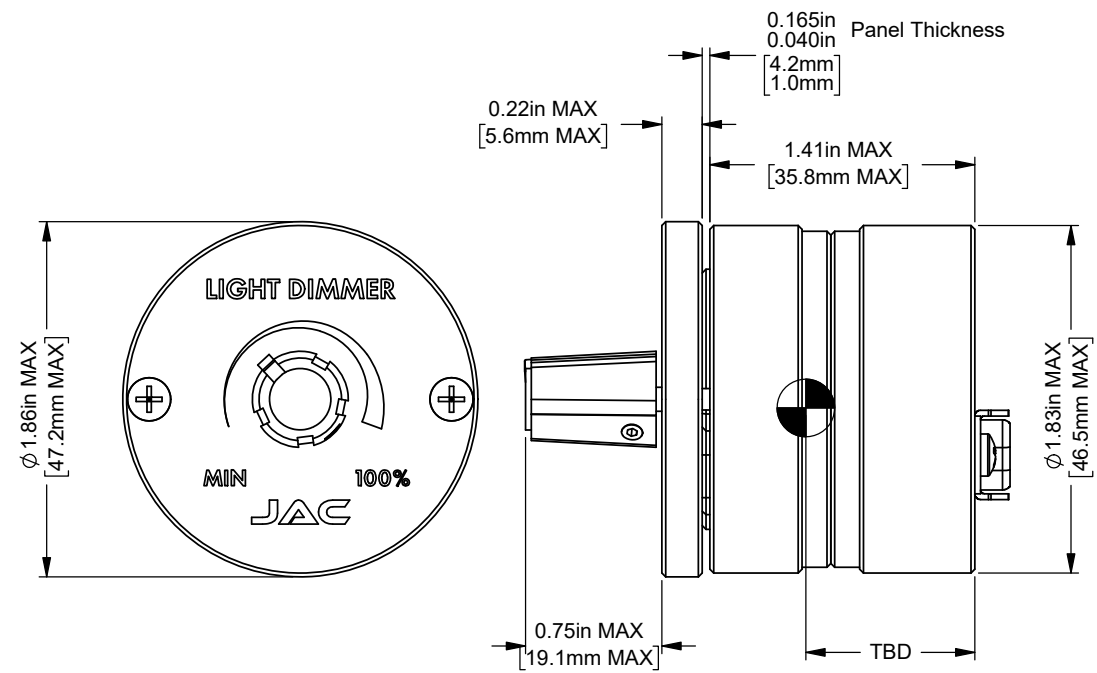
J1
JLD-001 MAIN



P1
9 PIN FEMALE DMIN
MATING CONNECTOR

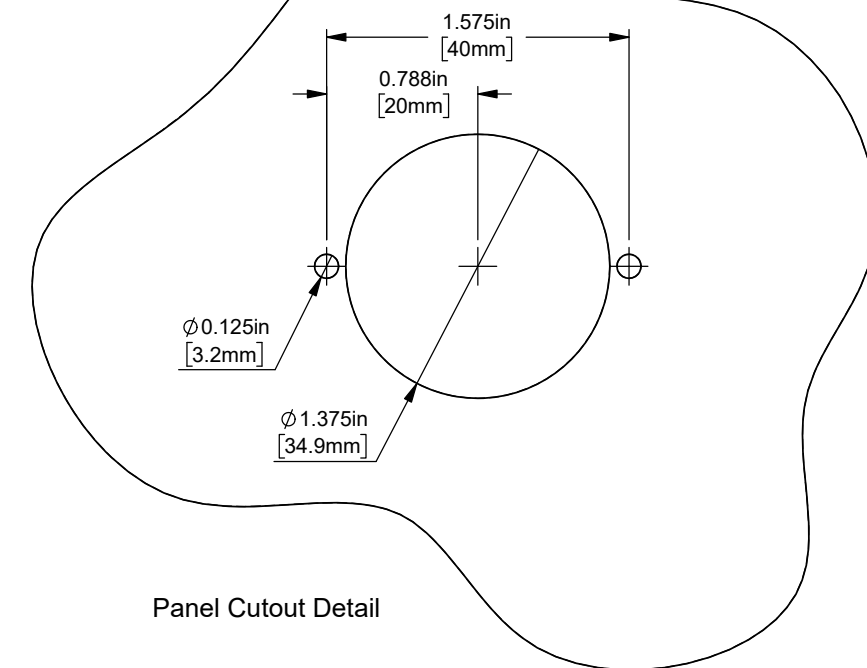
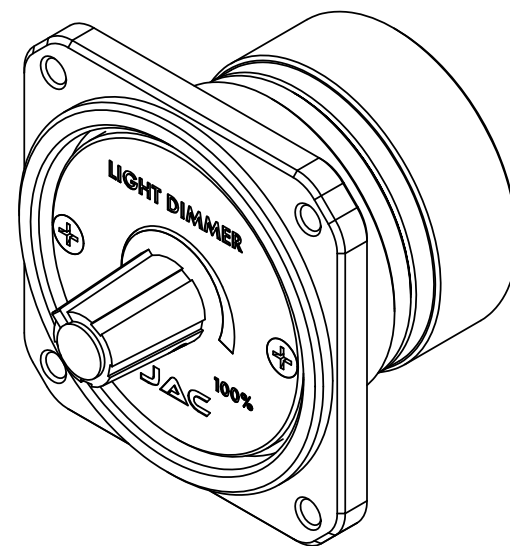
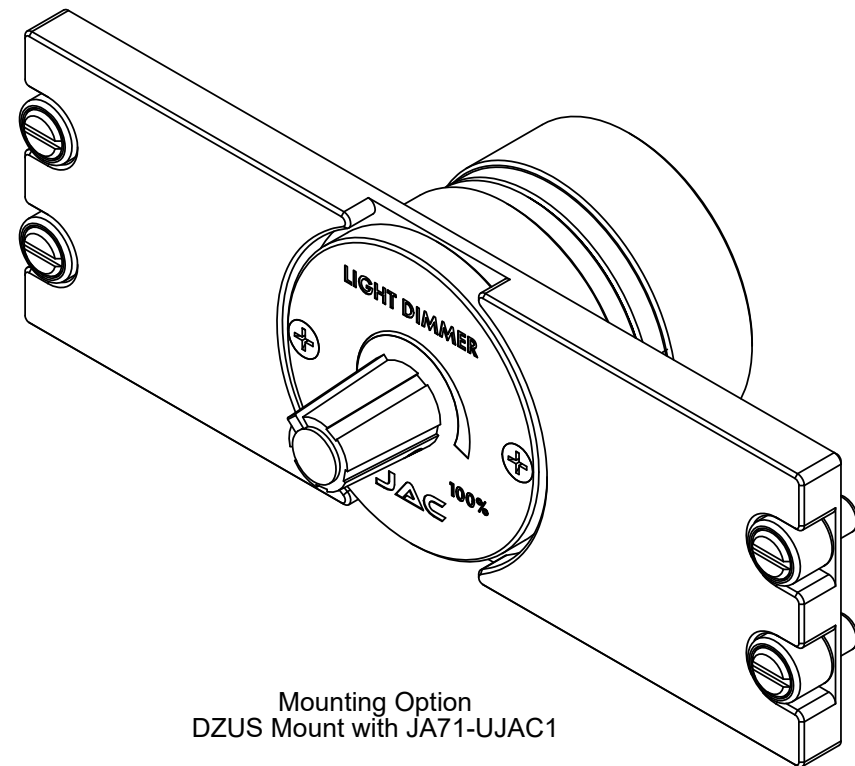


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CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP.		DOC NO. JLD-001 Interconnect Rev A.dwg		

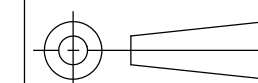


● CENTER OF GRAVITY
±0.03in [0.8mm]

WEIGHT: 0.27 lbs [0.12 kg] MAX.



UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
ANGLES ARE IN DEGREES
TOLERANCES:
1 DEC PLACE: ± 0.1
2 DEC PLACE: ± 0.01
3 DEC PLACE: ± 0.005
ANGLES: ± 0.5 DEG



MATERIAL: N/A
FINISH: N/A

PREPARED	TAT
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APPROVED	
CONFIDENTIAL & PROPRIETARY TO JUPITER AVIONICS CORP. DRAWING NOT TO SCALE	



TITLE
Panel Mounted Light Dimmer

NCAGE CODE
L00N3

PART NO.
JLD-001

SHEET
1/1

DOC. NO.
JLD-001 Mechanical Installation Rev A.SLDDRW



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Appendix B - Installation Documents



B1 Airworthiness Approval

Airworthiness approval of the JLD-001 may require completion of a TCCA Major Modification Report per CAR STD (AWM) 571 Appendix L, or a FAA Form 337. The sample wording for a description of the work is provided to assist the Installing Agency in preparing Instructions for Continued Airworthiness (ICA) when replacing existing equipment with a Jupiter Avionics JLD-001 Panel Mounted Light Dimmer. This sample may be modified appropriately for new installations. It is the installer's responsibility to determine the applicability of the method used. Installations performed outside Canada must follow the applicable aviation authority's regulations.

Sample Wording:

Removed the existing [model] equipment and replaced with a Jupiter Avionics JLD-001 Panel Mounted Light Dimmer in [aircraft location].

See Section 1 of the JLD-001 Installation and Operating Manual.

Installed in accordance with the JLD-001 Installation and Operating Manual, Revision [], and AC 43.13-2, Chapters 2, and 3.

The JLD-001 interfaces with existing aircraft systems per the Installation and Operating Manual instructions.

The JLD-001 Installation and Operating Manual provides detailed installation instructions and wiring diagrams (Section 2, and Appendices A and B).

Power is supplied to the JLD-001 through a []-Amp circuit breaker.

Aircraft equipment list, weights and balance amended. Compass compensation checked and found to conform to applicable regulations.

B2 Instructions for Continued Airworthiness

Maintenance of the JLD-001 Panel Mounted Light Dimmer is "on condition" only. Refer to the JLD-001 Maintenance Manual. Periodic maintenance of the JLD-001 is not required.

The following sample Instructions for Continued Airworthiness (ICA) provides assistance in preparing ICA for the Jupiter Avionics JLD-001 installation as part of a Type Certificate (TC) or Supplemental Type Certificate (STC) project to comply with CAR STD (AWM) 523/527/525/529.1529 or FAR 23/25/27/29.1529 "Instructions for Continued Airworthiness".

Items that may vary by aircraft make and model are shown in brackets ("[]") and should be filled in as appropriate. Some of the checklist items do not apply, in which case they should be marked "N/A" (Not Applicable).

Instructions for Continued Airworthiness, Jupiter Avionics JLD-001 Panel Mounted Light Dimmer in an [Aircraft Make and Model]

1. Introduction

[Aircraft that has been altered: Registration number, Make, Model and Serial Number]

Content, Scope, Purpose and Arrangement: This document identifies the Instructions for Continued Airworthiness for a Jupiter Avionics JLD-001 installed in an [aircraft make and model].

Applicability: Applies to a Jupiter Avionics JLD-001 installed in an [aircraft make and model].

Definitions/Abbreviations: None, N/A.

Precautions: None, N/A.

Units of Measurement: None, N/A.

Referenced Publications: JLD-001 Installation and Operating Manual
JLD-001 Maintenance Manual
STC/TC # [applicable STC/TC number for the specific aircraft installation]

Distribution: This document should be a permanent aircraft record.



2. Description of the System/Alteration

Jupiter Avionics JLD-001 Panel Mounted Light Dimmer with interface to [include equipment/systems as appropriate]. Refer to Appendix A of this manual for interconnect information. Refer to aircraft manufacturer approved interconnect for actual installation.

3. Control, Operation Information

Refer to section 3 of this manual.

4. Servicing Information

N/A

5. Maintenance Instructions

Maintenance of the JLD-001 is 'on condition' only. Periodic maintenance is not required. Refer to the JLD-001 Maintenance Manual.

6. Troubleshooting Information

Refer to the JLD-001 Maintenance Manual.

7. Removal and Replacement Information

Refer to Section 2 of this manual - the JLD-001 Installation and Operating Manual. If the unit is removed and reinstalled, a functional check of the equipment should be conducted.

8. Diagrams

Refer to Appendix A of this manual - the JLD-001 Installation and Operating Manual - for installation drawings and interconnect examples.

9. Special Inspection Requirements

N/A

10. Application of Protective Treatments

N/A

11. Data: Relative to Structural Fasteners

JLD-001 and appropriate mounting hardware installation, removal and replacement should be in accordance with applicable provisions of AC 43.13-1B and AC 43.13-2A.

12. Special Tools

N/A

13. This Section is for Commuter Category Aircraft Only

A. **Electrical loads:** Refer to Section 1 of the JLD-001 Installation and Operating Manual.

B. **Methods of balancing flight controls:** N/A.

C. **Identification of primary and secondary structures:** N/A.

D. **Special repair methods applicable to the airplane:** N/A.

14. Overhaul Period

No additional overhaul time limitations.

15. Airworthiness Limitation Section

N/A