

## Operation Manual

**Fiber-Lite®**

### A241 DC REGULATED FIBER OPTIC ILLUMINATORS

*A Product of Dolan Jenner Industries*



#### INTRODUCTION

The A-241 series is a family of 150 Watt, highly regulated, DC powered quartz halogen fiber optic illuminators. The A-241 illuminator is designed for a wide range of applications from laboratory and industrial illumination applications to precise machine vision illumination. The A-241 illuminator consists of an A-241P power supply unit and one(1) A-241L lamp module.

#### OPERATION

Insert the power cord into the power entry module at the rear of the power supply. Next, insert the power cord into a 3 wire grounded AC power receptacle. **Use only approved power cord supplied with the illuminator.** (The illuminator power supply comes set from the factory as either 115 VAC or 230 VAC. Contact the Factory if you desired operation at an alternate voltage.)

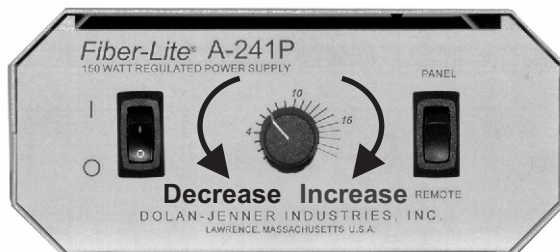
Connect the lamp power cable(s) to the A-241L lamp module(s).

Press the ON(1)/OFF(0) rocker switch on the front panel to ON(1). The illuminator will light and is ready for service.

#### MANUAL INTENSITY CONTROL

All the A-241P series illuminators are equipped with a front panel, rotary solid state intensity control. The 0 position (when control is turned fully counter-clockwise) corresponds to the lowest illuminator intensity. The 100 position (when control is turned fully clockwise) corresponds to the highest illuminator intensity.

**NOTE: Continuous operation of the illuminator at the highest intensity level will yield rated lamp life. Operating the illuminator at reduced intensity can result in significantly extended lamp life.**



#### REMOTE INTERFACE

To enable the remote interface move the PANEL/REMOTE switch on the front panel to the REMOTE position. When the switch is in the REMOTE position, the front panel intensity control is not active. If the Remote Intensity Control Signal is not connected, the illuminator will run at the maximum intensity setting until the Remote Intensity Control Signal is connected.

## DIGITAL MODEL REMOTE INTENSITY CONTROL

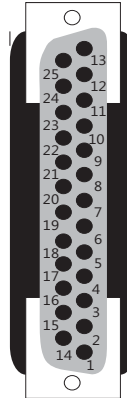
The Digital Remote Intensity Control uses an 8 bit, latching, parallel input Digital to Analog converter. The Digital Remote Intensity Control is NOT Centronics parallel compatible. Refer to the pinout below.

### PROGRAMMING THE REMOTE DIGITAL INTERFACE

Establish the digital control code onto pins DB0(LSB) to DB7(MSB).  
 Pull the Input Enable pin 10 Low to load the code into the remote interface.  
 Pull the Input Enable pin 10 High to latch the code into the remote interface. The digital code will remain loaded until a new code is provided and the Input Enable signal is toggled.

### Digital Remote Control - Pin Assignments

PIN	DESCRIPTION
1	+5v 10 mA max.
2	DB0 (LSB)
3	DB1
4	DB2
5	DB3
6	DB4
7	DB5
8	DB6
9	DB7 (MSB)



PIN	DESCRIPTION
10	Input Enable(CE)
11-22	Common Ground
23	Lamp Fail
24	Remote On/Off
25	Open

### Intensity Level / Digital Code

Intensity	Binary Code	Hex Code
21.0 volts (full power)	11111111	FFh
10.5 volts (approx. 1/2 power)	10000000	80h
0 volts (min. power)	00000000	00h

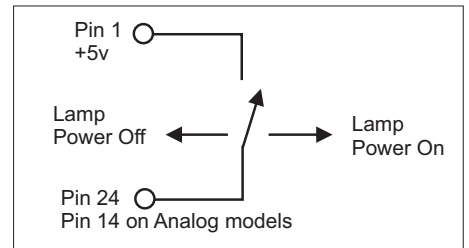
A one(1) bit change in the digital code is equivalent approximately to 82 millivolts. The digital code to lamp voltage is linear over the 0 to 255 range of inputs.

### RESPONSE TIME

The Remote Control module will respond to the change in digital input within several milliseconds of the Input Enable falling edge. However, due to the thermal inertia of the lamp, the illumination level of the lamp may take several hundred milliseconds to several seconds to respond depending on the magnitude of the intensity change. The response time is also a function of the individual lamp characteristics and may change from lamp to lamp.

### REMOTE ON/OFF FUNCTION

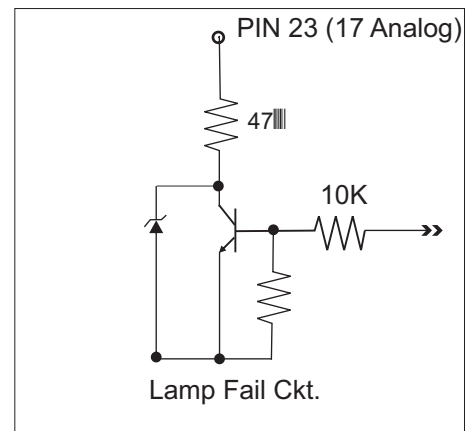
The Remote On/Off function will operate with the Panel/Remote switch in both the Panel and Remote positions. Connect a +5v signal to pin 14 to inhibit power to the lamp. The fan will still operate.  
 Remove the +5v signal from pin 24 (pin 14 on Analog models) to enable power to the lamp. The +5v on pin 1 can be used for this function. Use a manual switch, relay or FET switch to connect and remove the 5v signal on pin 24 (pin 14 on Analog models).



### LAMP FAIL SIGNAL

A signal indicating that the lamp has failed is available on Pin 23 (pin 17 on Analog models). This signal is open collector (see Figure IV). The user must supply the necessary circuitry to connect the lamp out signal to a signaling device. The maximum current through the circuit is 10 mA. When the signal at Pin 23 (pin 17 on Analog models) is logic High(5v) the lamp has failed.

The Lamp Fail signal will detect if current has stopped flowing to the lamp while the intensity control signal is not at 0 volts, the illuminator On-Off switch is in the On position and the Remote On-Off signal is in the On condition. The Lamp Fail signal will also indicate if the lamp is not properly seated after a lamp change or if the lamp power connector is not properly connected after a lamp change or if the lamp socket was replaced.



# ANALOG MODEL REMOTE INTENSITY CONTROL (Model A241PA)

The Remote Intensity Control is located on Pin 3 of the Remote Interface. When the PANEL/REMOTE switch is in the REMOTE position the intensity is controlled by the signal applied to Pin 3. The input signal must be limited to a 0 to +5 volt DC signal. A negative voltage or a voltage in excess of 5 volts will cause the lamp to run at maximum intensity potentially shortening lamp life. The A-241P Remote Intensity control is highly linear. At 0 volts the lamp voltage is 0 volts. At +5 volts the lamp voltage is the maximum voltage for the lamp specified at the time the order was placed. A 2.5 volt input signal will cause the lamp to run at 50% of lamp voltage. Refer to Table A for intermediate values.

Pin 1 can be used to supply power to a remote potentiometer. Connect the potentiometer as shown in Figure A. The 500 ohm series resistor prevents shorting the power supply on Pin 1 if the potentiometer should fail as a short circuit. In all cases the minimum resistance between Pin 1 and common ground (Pins 2 and 15) must be at least 500 ohms to prevent damage to the Pin 1 power supply.

The user may also use a fixed voltage divider to control the illuminator at a non-varying intensity level. Refer to Figure B and the resistance values in Table 1 for sample resistor values and the corresponding lamp intensity levels. In all cases, the minimum total resistance value connected between Pin 1 and common ground (Pins 2 and 15) must be 500 ohms ( $R_A + R_B \geq 500$  ohms.)



**WARNING**



Turning off power switch doesn't cut off high voltage inside the housing. Please remove power plug before opening housing to avoid electrical shock! The power cord should always be easily accessible.

**WARNING**

Replace the fuse with the correctly rated fuse as listed on the label on the back of the illuminator. Use of an improper fuse can create a hazardous situation.

## FUSE REPLACEMENT

- I Press the ON(1)/OFF(0) switch to the OFF(0) position.
- I Remove the AC line cord from the AC power receptacle.
- I Remove the AC line cord from the power entry module at the rear of the illuminator. The fuse drawer is part of the power entry module. The drawer is located directly beneath where the AC line cord plugs in.
- I Pull out the fuse drawer. Remove the blown fuse. The second fuse is the spare.
- I Place the replacement fuse into the fuse drawer. The fuse will work in either orientation.
- I Push the fuse drawer until it "clicks" into position.
- I Attach the AC line cord to power entry module at the rear of the illuminator. The illuminator is now ready for service.

## CLEANING

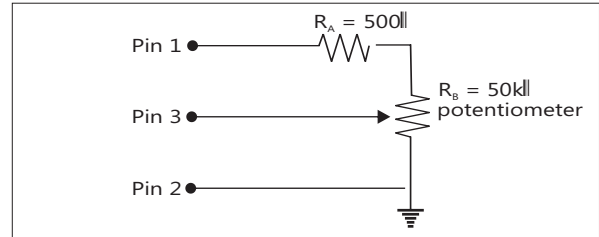
If necessary wipe exterior surfaces only with a soft cloth. Do not use fluids to clean the exterior of the illuminator. Under no circumstances allow fluids of any kind to enter the illuminator power supply or lamp module(s).

## REPLACEMENT PARTS

Part No.	Model	Description
686009-02787	A241P	Fuse, 3.15A, 5 x 20, 250 V, slow blow

## Analog Remote Control - Pin Assignments

Pin #	Signal
1	+5 VDC at 10mA max.
3	0 - 5 V (+) input
2, 15	0 - 5 V (-) input (common return)
14	Remote On/Off Open
16	Chassis ground (shield)
17	Lamp Fail
4-13	Open



RA (Ω)	RB (Ω)	Voltage VDC	% @ Full
Intensity (Pin 3)			
20K		5.0	100%
20K	2.2K	4.5	90%
20K	5K	4.0	80%
20K	8.6K	3.5	70%
20K	13K	3.0	60%
20K	20K	2.5	50%
13K	20K	2.0	40%

## PERFORMANCE STATEMENT

Dolan-Jenner Industries, Inc. (DJI) recognizes that its illuminator products may be used under an almost unlimited variety of conditions. As such, we are prepared to assist the customer in the selection and application of any of these products. This includes application engineering, sample testing and other means as determined by DJI.

Where DJI has made specific recommendations for its products, systems, or detection techniques (based on complete and detailed information furnished by the customer) we will extend every effort to assure that the customer is satisfied with the performance of our products. Continual development and improvement of DJI products may require changes in details that do not coincide with descriptions or illustrations shown. All fiber optic bundle diameters are nominal.

## TWO YEAR WARRANTY ON LIGHT SOURCES

**Dolan-Jenner Industries, Inc. (DJI)** warrants its products to be free from defective material and workmanship. Any light source or parts thereof which are determined by DJI to be defective within two years (average product life cycle) from shipment date will be replaced or repaired at our option. All fiber optics are warranted for one year. This warranty specifically excludes both incandescent and quartz-halogen lamps, and optical filters.

Any products which, in our opinion, have been subjected to misuse, incorrect wiring, or where installation procedures are not in accordance with the instruction manual, are excluded from this warranty. Nor does this warranty extend to products on which repairs or alterations have been made outside the factory, or on which the identification or serial number has been altered or to accessories not of our manufacture.

Our obligation with respect to products or parts covered by this warranty shall be limited to repair or replacement, F.O.B., Boxborough, Massachusetts. In no event shall DJI be held liable for consequential or special damages, or for transportation, installation, adjustment, or other expenses which may arise in connection with such products or parts. This warranty is in lieu of all other statements or warranties or guarantees, written or implied, by DJI or its authorized representatives.

**Important: Please contact factory for a return authorization number prior to shipping merchandise to factory.**

## TECHNICAL DATA

Supply Voltage:	100-240 VAC, 50/60 Hz or Universal AC Input.	
Power Consumption	A-241P - 200 Watts	
Fuse	A-241P- Single 3.15 Amp, 250V, time delay, 5 x 20 mm	
Noise Level	Approximately 32 dB (A)	
Safety Approvals	BV, CE	
Dimensions	A-241P Power Supply	7.8 in. W x 9.69 in. D x 3.54 in. H
Weight	A-241P Power Supply	6.25 lbs.
Max. Housing Temp.	A-241P <10 °C above ambient	

## Environmental Conditions Use Specifications

Type of Use	Indoor at max. altitude of 2,000 M	
Installation Category	II	
Temperature Range	5°C to 40°C	
Relative Humidity	80% max. up to 31° C decreasing linearly to 50% relative humidity @ 40° C	
Pollution Degree	2	

**NOTICE: if the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.**

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