MaxDim Installation Instructions

P/N 9100-001-A & 9100-001-B

PARTS SUPPLIED 9100-001-A:

- 1ea Dimmer Control P/N 9100-001-A, including STC logbook copy
- 3ea fully insulated blue female crimp-on spade terminals for 14-16 AWG wire
- 1ea placard
- 1ea installation template
- 1ea 1/16" long handle key Allen wrench
- 1ea knob and dimmer mounting nut

PARTS SUPPLIED 9100-001-B:

- 1ea Dimmer Control P/N 9100-001-B, including STC logbook copy
- 1ea dimmer mounting nut
- 3ea fully insulated blue female #6 crimp-on ring terminals for 14-16 AWG wire
- 3ea 6-32 X 1/4" button head socket SS screws including #6 SS internal lock washer
- 1ea 1/16" long handle key Allen wrench
- 1ea 5/64" long handle key Allen wrench
- 1ea placard
- 1ea installation template
- 1ea knob

NEW INSTALLATION:

1. Locate a convenient place for the Dimmer Control. Drill two holes using the template provided. Drill the first one (3/8”) at the location where the center of the Dimmer is desired. Drill the second (anti-rotation) 11/64" hole, offset to the left from the 3/8” hole.
2. Determine the current that the circuit will be required to carry.
3. Test position the Dimmer Control and determine the length of the wires required.
4. Remove the Dimmer Control and proceed with the installation. Select the correct wire size from the **WIRE SIZE CURRENT/CAPACITY TABLE**. If the installation is in an aircraft, use only MIL-W-16878E/4 Type E, Teflon insulated, Silver-Plated Copper Wire or equivalent.
5. Find the location of the power source.
6. Install a breaker of "**CALCULATED SIZE**” for the dimming circuit power source.

9100-001-A WIRING:

1. Run a red wire from the breaker to the MaxDim positive POS terminal, then select and crimp a blue female spade connector to the end of the red wire. Push the spade connector onto the POS terminal on the MaxDim Controller.
2. Using the same technique that was used with the red wire, run a black wire from the male GND terminal on the MaxDim to system ground. The common (GND) wire is simply a signal wire used by the unit. It does not carry heavy currents during operation. Use a blue spade connector for this wire. Push this connector onto the male GND terminal of the MaxDim.

3. Again using the same technique that was used with the red wire, run a blue wire from the output CKT terminal for the dimming circuit. Select and install a blue spade connector to the end of the blue wire and push it onto the CKT terminal on the MaxDim Controller.
4. With the MaxDim inserted from the rear into the 3/8” drilled hole and with the placard placed over the threads on the MaxDim, install a washer and a nut to hold the dimmer in place. Before tightening the nut, insure that the anti-rotation plastic bump is seated in the 0.170" (11/64") hole and the placard is vertically aligned.
5. Install the knob using the provided 1/16" hex wrench.

EXISTING/REPLACEMENT INSTALLATION:

1. Locate a convenient place for the Dimmer Control. Drill two holes using the template provided. Drill the first hole (3/8”) at the location where the center of the MaxDim is desired. Drill the second (anti-rotation) 11/64" hole offset to the left from the first hole.
2. Determine the positive supply, dimmer circuit, and chassis ground wiring.
3. Test position the MaxDim to determine if any additional wire is required.
4. Insure that the breaker for the MaxDim Controller power source is installed in series with the power source. Reference page 3: **DETERMINING THE BREAKER SIZE.**
5. Remove the MaxDim and proceed with the installation. Select the correct wire size from the **WIRE SIZE CURRENT/CAPACITY TABLE**. If the installation is in an aircraft, use only MIL-W-16878E/4 Type E, Teflon insulated, Silver-Plated Copper Wire or equivalent.
6. Run a red wire from the breaker to the MaxDim POS (positive) terminal, then crimp a blue spade connector to the end of the red wire. Push the spade connector onto the POS terminal on the MaxDim controller.
7. Using the same technique that was used with the red wire, run a black wire from the GND terminal on the MaxDim to system ground. The GND (common) wire is simply a signal wire used by the unit and does not carry heavy currents during operation. Use a blue spade connector for this wire.
8. Again using the same technique that was used with the red wire, run a blue wire from the CKT (output) terminal on the MaxDim for the dimming circuit. Select and install a blue crimp-on spade connector to the end of the blue wire and push it onto the male CKT terminal on the MaxDim Controller.
9. With the MaxDim inserted from the rear into the 3/8” drilled hole and with the placard placed over the threads on the MaxDim, install a washer and a nut to hold the MaxDim in place. Before tightening the nut, insure that the anti-rotation plastic pin is seated in the 11/64” hole and the placard is vertically aligned.
10. **NOTE: THE THREADS ARE PLASTIC AND CAN BE BROKEN! MAKE SURE THAT THE DIMMER IS SITTING FLAT AGAINST THE PANEL WITH THE ANTI-ROTATION PIN IN THE HOLE. DO NOT OVER TIGHTEN THE NUT DURING INSTALLATION. 1/4 TURN PAST BOTTOM IS PLENTY.**

FUNCTIONAL TEST:

1. Turn the knob fully counter-clockwise to eliminate power to the system.
2. Slowly rotate the knob clockwise. The MaxDim lamp dimmer circuit will activate and with a continued clockwise rotation the lamps will increase in intensity.
3. Full clockwise rotation applies full voltage to the MaxDim lamp dimmer circuit.
4. Full counter-clockwise removes the voltage from the MaxDim lamp dimmer circuit.

9100-001-B WIRING:

1. Use the same installation techniques used for the 9100-001-A above, but use the crimp-on ring terminals provided instead of the spade connectors provided with the 9100-001-A.
2. Each wire is connected to the MaxDim with ring terminals crimped onto the wires and secured to the respective terminals on the MaxDim with 6-32 X 1/4" button head socket SS screws including a #6 SS internal lock washer.

9100-001-B CONNECTIONS :

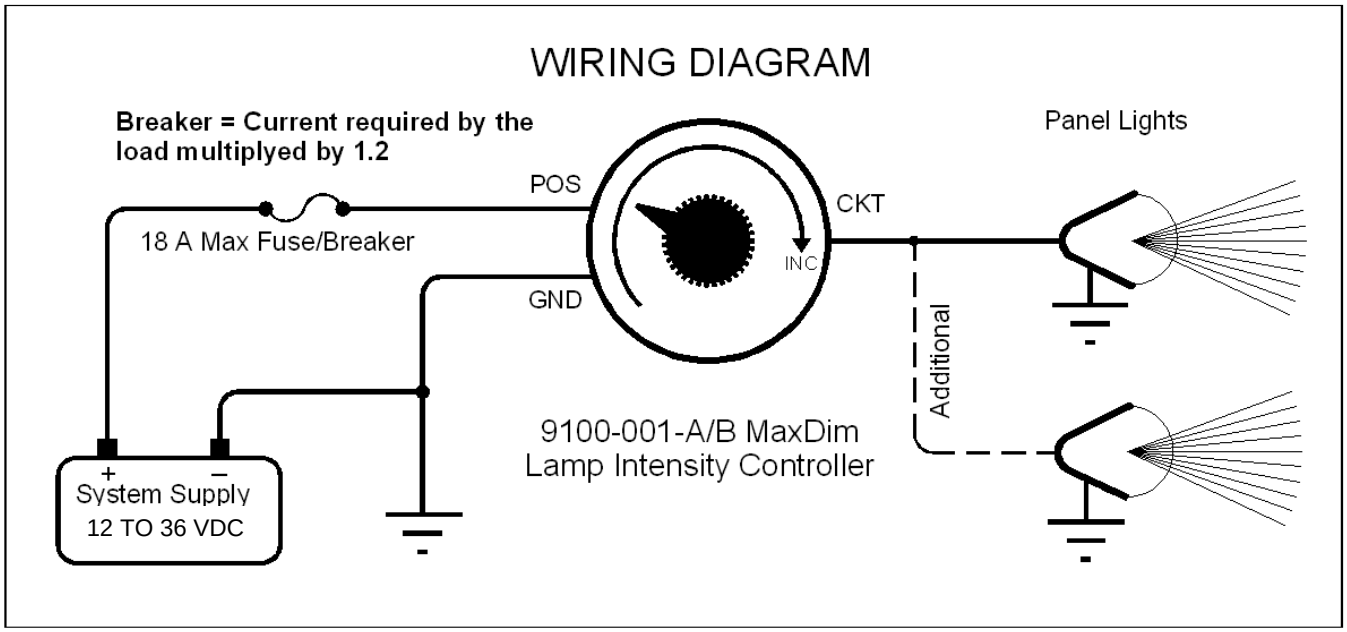
1. Locate the 5/64" long handle key Allen wrench.
2. Insert the Allen wrench into the head of the button head screw.
3. Place the #6 internal star lock washer onto the button head screw.
4. Place the ring terminal with the crimped-on wire onto the button head screw.
5. Screw the button head screw into the appropriate threaded terminal on the MaxDim.

FUNCTIONAL TEST:

1. Turn the knob fully counter-clockwise to eliminate power to the system.
2. Slowly rotate the knob clockwise. The MaxDim lamp dimmer circuit will activate and with a continued clockwise rotation the lamps will increase in intensity.
3. Full clockwise rotation applies full voltage to the MaxDim lamp dimmer circuit.
4. Full counter-clockwise removes the voltage from the MaxDim lamp dimmer circuit.
5. The MaxDim lamp dimmer circuit voltage is continuously variable from off to full on.

DETERMINING THE BREAKER SIZE:

1. Determine total current required by the load and multiply by 1.2.
2. Select the next higher rated breaker to use with your MaxDim. Do not exceed an 18 ampere breaker.



—SPECIFICATIONS—

Voltage Range: 12 to 35VDC
Max Current: 12.5 A
Controlled Output: 0 to 12/35 VDC
0 to12.5 A

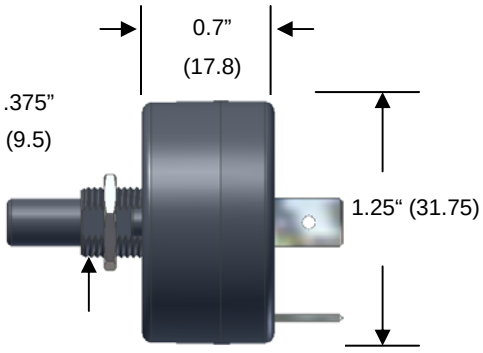
Capacity:

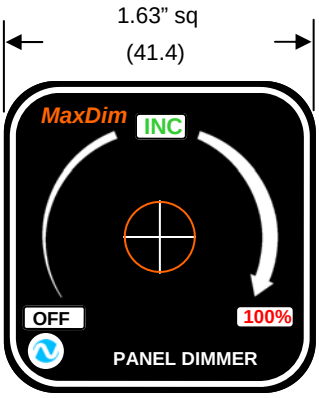
- 150 Watts @12 VDC
- 300 Watts @ 24 VDC
- 350 Watts @ 28 VDC

Potentiometer Rotation: 300 Deg.
Rotational Life: 500K Turns

Operating Temperature range: -30°C to +65°C
Internal Temperature Protect: +85°C
Storage Temperature: -40°C to +100°C
Maximum Internal Temperature: @12.5 A
+15 °C above Ambient
Enclosure Material: Bayer FR 110 Resin
Meets UL 94 Flame Rating: V-2 (0.03in) V-0 (0.059in) 5VB (0.098in) 5VA (0.13in)
Approvals: FAA PMA STC SA01800SE
RTCA/DO-160E Tested/Qualified EMC
Order P/N 9100-001-A Spade Terminals
Order P/N 9100-001-B Ring Terminals

Seaton Engineering Corp.
Loon Lake, WA. 99148





ONE YEAR LIMITED WARRANTY

SEC will repair or replace, at its expense and at its option any device manufactured by SEC which in the normal use has proven to be defective in workmanship or material, provided that the customer returns the product prepaid to SEC along with proof of purchase of the product within one year and provides SEC with reasonable opportunity to verify the alleged defect by inspection. SEC will not be responsible for any asserted defect which has resulted from misuse, abuse or over stressing above the published specifications. SEC will under no circumstances be liable for incidental or consequential damages resulting from the defective product. This warranty is SEC's sole warranty and sets forth the customer's exclusive remedy, with respect to defective products; all other warranties, express or implied, whether of merchantability, fitness for purpose, or otherwise, are expressly disclaimed by SEC.

Seaton Engineering Corporation

CAUTION

Many EFIS, GPS, and other equipment with screens have their own internal dimming circuitry and only the steam gauge instruments and panel lights are controlled by the independent MaxDim controller. However, the installing technician and the owner must perform a post installation check for proper function and verification of compatibility with any existing equipment that might appear on these airplanes. With the possibility that there might be an Electronic Flight Instrument System (EFIS) tied into the existing MaxDim circuitry, the FAA has advised that the installing technician and owner verify that they cannot dim any (EFIS) all the way to zero, so there is no danger of failure of this simple MaxDim controller causing all of the (EFIS) displays/instruments to be black. If this incompatibility exists the (EFIS) must be removed from the dimming circuit.

FAA REQUIREMENTS - Amend the weight and balance records and make the necessary log book entry. Complete an FAA form 337 showing the installation of this equipment in accordance with the STC instruction and submit one copy to the FAA and one copy to the aircraft owner. File all data and a copy of the STC with the aircraft records.

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Part 43.16 and 91.403 of the FAR's unless and alternative program has been FAA approved. **Airworthiness Limitation**: MaxDim P/N 9100-001-A/B Light Dimmer Controller, manufactured by Seaton Engineering Corporation has no repairable parts and if a failure occurs, the part must be replaced in its entirety.

General Engineering Data Regarding Wire Sizes and Current Capacities Capacity Data
WIRE AND CABLE DERATING CRITERIA FROM MIL-STD-975

AWG	Diameter	Diameter	Ohms Per	Ohms Per	Maximum	AWG	Derated Current	
Gauge	Inches	mm	1000 Ft	km	Ampere	Gauge	Single	Bundled
14	0.0641	1.6281	2.525	8.282	32	14	19.0	8.5
15	0.0571	1.4503	3.184	10.4435	28	15	16.6	7.4
16	0.0508	1.2903	4.016	13.1725	22	16	13.0	6.5
17	0.0453	1.1506	5.064	16.6099	19	17	11.2	5.6
18	0.0403	1.0236	6.385	20.9428	16	18	9.2	5.0
19	0.0359	0.9119	8.051	26.4073	14	19	8.1	4.4
20	0.032	0.8128	10.15	33.292	11	20	6.5	3.7
21	0.0285	0.7239	12.8	41.984	9	21	5.3	3.0
22	0.0254	0.6452	16.14	52.9392	7	22	4.5	2.5

United States of America

Department of Transportation Federal Aviation Administration

Supplemental Type Certificate

Number SA01800SE

This certificate, issued to: **Seaton Engineering Corp.**
40145 Sunset Drive
Loon Lake, WA 99148

certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of Part **23** *of the* **Code of Federal Regulations.**

Original Product-Type Certificate Number: *See attached Approved Model List (AML)
Make: No. SA01800SE for list of approved aircraft
Model: models and applicable airworthiness regulations

Description of the Type Design Change: Fabrication and installation of new or replacement of existing instrument panel lights dimmer control. Installation in accordance with Seaton Engineering Corp. FAA approved Master Drawing document 9750-002, dated May 10, 2007, or later FAA approved revision.

Limitations and Conditions: Approval of this change in type design applies to only the aircraft listed on the approved model list. This approval should not be extended to models on which other previously approved modifications are incorporated unless it is determined by the installer that the relationship between this change and any of those other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of that aircraft. A copy of this certificate must be maintained as part of the permanent records of the modified aircraft.

If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: November 3, 2006
Date of issuance: October 30, 2007

Date reissued: December 1, 2011; July 16, 2019
Date amended:

FEDERAL AVIATION ADMINISTRATION

By direction of the Administrator

(Signature)

Acting Manager, Seattle ACO Branch
(Title)

Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both. This certificate may be transferred or made available to third persons by licensing agreements in accordance with 14 CFR 21.47. Possession of this Supplemental Type Certificate (STC) document by persons other than the STC holder does not constitute rights to the design data nor to alter an aircraft, aircraft engine, or propeller. The STC's supporting documentation (drawings, instructions, specifications, flight manual supplements, etc.) is the property of the STC holder. An STC holder who allows a person to use the STC to alter an aircraft, aircraft engine, or propeller must provide that person with written permission acceptable to the FAA. (Ref. 14 CFR 21.120). This certificate may be transferred in accordance with FAR 21.47.

SEATON
ENGINEERING

To whom it may concern:

Please use this letter as evidence of permission granted by the holder of STC SA01800SE, to the user, to install Seaton Engineering's MaxDim or MiniDim Lamp Intensity Controller, model 9100-001-A/B/C/D/E/F/G or H in an aircraft included on the Approved Model List referenced by STC SA01800SE.

Jeff Christensen
President/CEO
Seaton Engineering Corporation
40145 Sunset Drive
Loon Lake, WA. 99148