



Deklin Technologies

DWA2000

WAAS Annunciator



Installation and Operations Manual

Rev 1.1 December 2014

Deklin Technologies Inc
413 Childe Harolds Lane
Brentwood, TN 37027
Tel: (615) 819-0800 Fax: (615) 819-0801
www.deklintech.com

REVISIONS

REV	DESCRIPTION	DATE	APPROVAL
0.1	Preliminary Release	Aug 22, 2014	TJD
1.0	Release		
1.1	Warning about Parallel Annunicator	Dec. 20, 2014	JP

Section I General Information

INTRODUCTION

This manual contains information regarding the physical, mechanical, electrical characteristics, and the installation requirements for the DWA2000 WAAS Annunciator Panel.

SCOPE

This manual provides detailed installation and operational instructions for the DWA2000 WAAS Annunciator Panel.

EQUIPMENT DESCRIPTION

The Deklin Technologies, Inc. DWA2000 is a self-contained WAAS GPS Annunciator Panel for 14V and 28VDC aircraft. This unit displays annunciation status from GPS receivers that output discrete signals for remote annunciation purposes.

The DWA2000 features are:

- 2.50 w x 0.72 h x 0.35 thick
- 11-32 VDC input
- Dual LED's for each annunciator
- Photocell and discrete dimming

Annunciations

VLOC – NAV information presented on HSI or CDI

GPS – GPS information presented on HSI or CDI

MSG – Indicates message(s) active

WPT – Indicates reaching the arrival waypoint

TERM – Indicates GPS is within 30 miles of departure or arrival airport

APR – Indicates the approach is active

LOI – Indicates GPS receiver detected a Loss of Integrity

OBS – Indicates OBS Mode has been selected on GPS

SPECIFICATIONS

General Specifications

Case Material:	Aluminum
Dimension:	2.50 w x 0.72 h x 0.35 thick
Operating Temperature:	-55C to + 70C
Survival Temperature:	-55C to + 85C
Humidity:	95%
Altitude:	50,000ft Max
Weight:	2.0 oz
Connector:	12 Wires
DO-160E	

Input Specifications

Input Voltage:	11-33VDC
Current:	0.170 Amps Max (@ 27.5 VDC)
Fuse / Circuit Breaker Rating:	0.5 Amps

Interface Specifications

A+	Red - 11-33VDC
Ground	Black - Airframe Ground
Manual Lamp Test	White/Blue - Requires ground low
Manual Lamp Dim	White/Red- Requires ground low
VLOC	Brown- Requires a logic low to annunciate
GPS	Blue- Requires a logic low to annunciate
MSG	Violet- Requires a logic low to annunciate
WPT	Orange- Requires a logic low to annunciate
TERM	Yellow- Requires a logic low to annunciate
APR	White- Requires a logic low to annunciate
LOI	Green - Requires a logic low to annunciate
OBS	Gray - Requires a logic low to annunciate

EQUIPMENT SUPPLIED

IK1000-000 Install Kit

1	Each	12 Pos Uni-Mate Female Connector
1	Each	12 Pos Uni-Mate Male Connector
12	Each	18-24 Awg Crimp Sockets
12	Each	18-24 Awg Crimp Pins

EQUIPMENT REQUIRED BUT NOT SUPPLIED

1	Each	0.5 Amp Circuit Breaker or Fuse
---	------	---------------------------------

Section II - Installation

GENERAL INFORMATION

Scope

This section provides detailed installation and interconnection instructions for the DWA2000 WAAS GPS Annunciator. Please read this manual carefully before beginning any installation to prevent damage and post installation problems.

The Deklin Technologies, Inc. DWA2000 WAAS GPS Annunciator is a pre-assembled WAAS GPS Annunciator. It is intended to provide a convenient solution in a single device for installers to use in place of producing the same annunciators from discrete components as specific in GPS installation manuals. The installer is responsible to certify as airworthy and determine eligibility of this product for installation in accordance with FAA Parts 21 and 43, IAW AC20-62E, Section 11, Paragraph a.

11. ELECTRICAL PARTS AND INSTRUMENTS.

a. Electronic Kits.

Kits assembled by non-certificated individuals are not eligible for installation on TC'd aircraft until the part is certified as airworthy and found eligible for installation in accordance with parts 21 and 43. During and after assembly, these kits should receive documented conformity inspections by properly certificated persons to ensure that they meet all applicable airworthiness requirements for use on the specific aircraft on which they are to be installed. The installation of these approved units should be accomplished by or under the supervision of a properly certificated person or agency in accordance with parts 21 and 43. When the installation is a major alteration, the kit data and the data used for the alteration of the product must be approved by a representative of the Administrator. An appropriately certificated person must complete the maintenance records to ensure that the aircraft is approved and airworthy for return to service.

After inspection the installer should validate they have inspected this device by noting as such on any documentation used to record the installation. The absence of this validation does not release the installer from the responsibility of validating this product nor does it place any responsibility on Deklin Technologies, Inc.

Installation Requirements

The DWA2000 requires specialized knowledge and tools for an effective installation. An appropriately rated Certified Repair Station must install this equipment in accordance with applicable regulations. Deklin Technologies, Inc warranty is not valid unless installed by an authorized FAA approved repair station. Failure to follow any of the installation instructions or installation by a non-certified individual or agency will void the warranty and may result in a non-airworthy installation.

Unpacking and Inspection

Use care when unpacking the equipment. Inspect the unit and all the parts supplied for visible signs of shipping damage. Examine the unit for loose or broken pieces. Verify the correct quantity of components supplied with the list in Section I. If any claim is to be made, save the shipping material and contact the freight carrier. DO NOT return any items damaged in shipping to Deklin Technologies, Inc. If any items show signs of external shipping damage, contact Deklin Technologies, Inc for a replacement. Do not attempt to install a damaged unit. Equipment returned to Deklin Technologies, Inc for any other reason should be shipped in the original packaging, or other UPS approved packaging.

INSTALLATION PROCEDURES

Cooling Requirements

Forced air-cooling is not required for the DWA2000. However, the equipment should be kept away from heat sources without adequate cooling provided.

(i.e. defrost or heating ducts, dropping resistors, heat producing avionics.)

Mounting Requirements

The DWA2000 must be mounted inside the pressure vessel in a temperature controlled environment unless the aircraft's service ceiling is less than 25,000 feet.

The DWA2000 must be rigidly mounted to a secure structure in accordance with FAA Advisory Circular AC 43.13-2A. The unit should be mounted in an area with adequate clearance for the unit and associated wiring.

The DWA2000 must be firmly mounted using two 4/40 screws through the front of the housing unit with appropriate locking nuts.

Equipment Location

The DWA2000 must be mounted as close to the pilot's field of view as possible. The preferred location is near the primary HSI/CDI that will be displaying the GPS/VLOC information.

Cable / Connector Assemblies

The 12 conductor 1 foot long cable is provided without the connector attached to allow the cable to be fed through a 0.30" hole in the panel. Once inserted the included 12 pin connector is added.

The mating 12 conductor connector is used with an installer's fabricated harness.

Cable Harness Wiring

Refer to the included wiring diagrams to assemble a wiring harness. All wires must be MIL-SPEC in accordance with current regulations. Proper stripping, shielding and soldering techniques must be used at all times.

Refer to FAA Advisory Circular AC 43.13-2A for more information. Failure to use correct techniques may result in improper operation, electrical noise, and/or unit failure. Damage caused by improper installation will void warranty.

Cable Routing

Due to the variety and high power of equipment in today's aircraft, there is a potential for both electrical and conducted noise interference. To minimize the occurrence of noise being introduced into the system, please follow these installation guidelines.

Do not bundle any lines from this unit with transmitter coax lines.

Do not bundle any lines from this unit with any other audio or high voltage power lines.

Do not bundle any lines from this unit with 400 Hz synchro wiring or AC power lines such as strobes or inverters.

Do not position this unit or route wiring from this unit next to any device with a strong alternating magnetic field such as an inverter.

Use shielded wire where shown and ground as indicated.

Avoid sharp bends in cabling and routing near aircraft control cables.

Installation with Other Annunciators

The DWA2000 Annunciator can not be installed in parallel with separate annunciator indicators unless external blocking diodes are installed. Refer to wiring examples.

Recommended blocking diode – Fairchild SB380

Post Installation Check

After installation wiring is complete verify power is on the red wire only and airframe ground on the black only.

Operational Checkout

1. Connect connectors to DWA2000 and verify positive locking.
2. Apply power to aircraft and avionics systems.
3. The DWA2000 should come on with either the VLOC or GPS annunciation lit which should correspond to the mode selected on the GPS device.
4. MSG may be flashing depending on the status of the GPS receiver.
5. For Garmin GNS430W and GNS530W installations refer to section 5 of the applicable installation manual for manual testing of annunciations.
6. If the optional Manual Dimming circuit is used verify proper operation.
7. If the optional Manual Annunciator Test function is used verify proper operation.
8. No periodic maintenance or calibration is necessary for continued airworthiness of the DWA2000.

Section III – Warranty and Service

WARRANTY

Deklin Technologies, Inc. warrants this product to be free from defect in workmanship and material for a period of 24 months from the time of installation or 26 months from the factory shipping date. This warranty is valid only if the equipment is installed in an aircraft by a FAA certified avionics facility (or other ICAO agency).

If during the warranty period this unit should fail it will be at the discretion of Deklin Technologies, Inc to send a replacement unit or repair the original unit. All units must be returned to the factory for repair or replacement.

All shipping and handling charges for the return of a unit to the factory are the responsibility of the purchaser. Domestic UPS Ground shipping charges for sending an exchange or repaired unit to the customer will be the responsibility of Deklin Technologies, Inc. Any additional charges as a result of requested improved delivery time, alternate carrier, insurance, or handling costs are the responsibility of the customer. All freight, handling, insurance, brokerage fees, duties and taxes for shipments outside the continental United States is the responsibility of the customer.

Deklin Technologies, Inc shall not be liable for incidental or consequential damages. This warranty does not cover a defect that has resulted from improper handling, storage or preservation, unreasonable use, or maintenance. This warranty is void if there is any attempt to disassemble this product without factory authorization. This warranty does not cover expenses incurred for the removal and/or installation of this product.

All items repaired or replaced under this warranty are warranted for the remainder of the original warranty period. Deklin Technologies, Inc reserves the rights to make modifications or improvements to the product without obligation to perform like modifications or improvements to previously manufactured products.

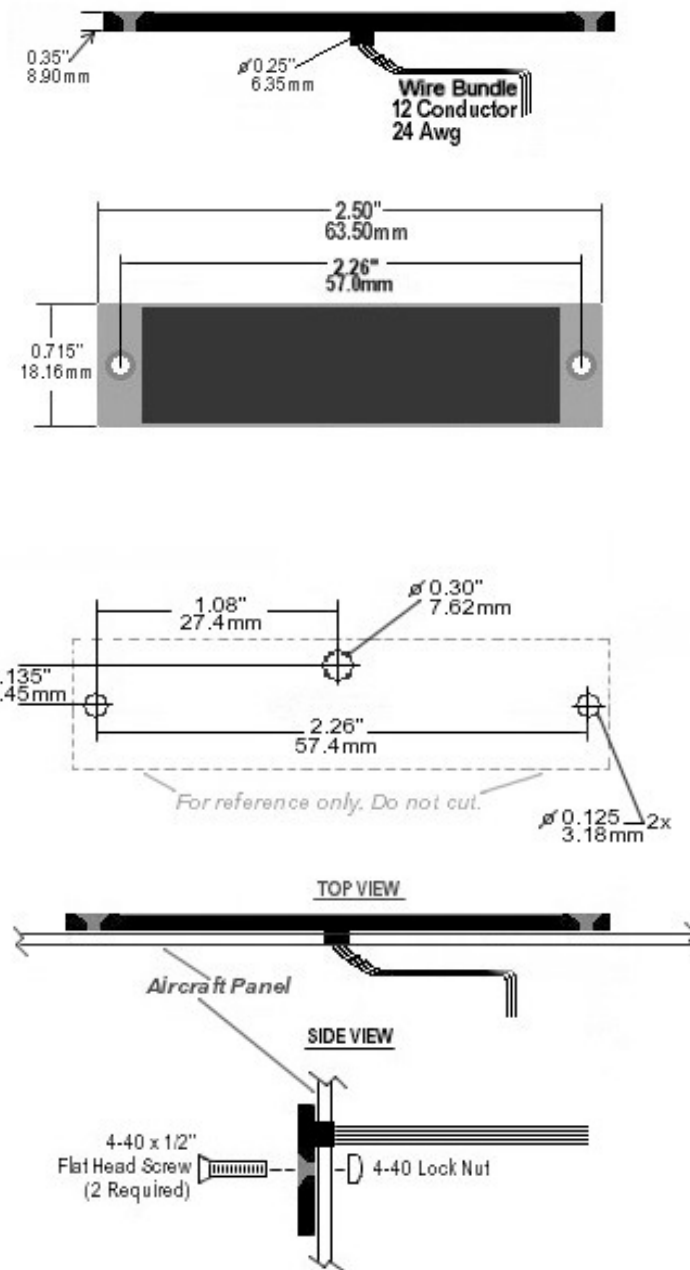
FACTORY SERVICE

In the event any unit needs to be returned to the factory, contact Deklin Technologies, Inc for a Return Authorization Number prior to returning.

Units that arrive without a Return Authorization Number, or telephone number, will be returned un-repaired. Deklin Technologies, Inc is not responsible for items returned via Mail.

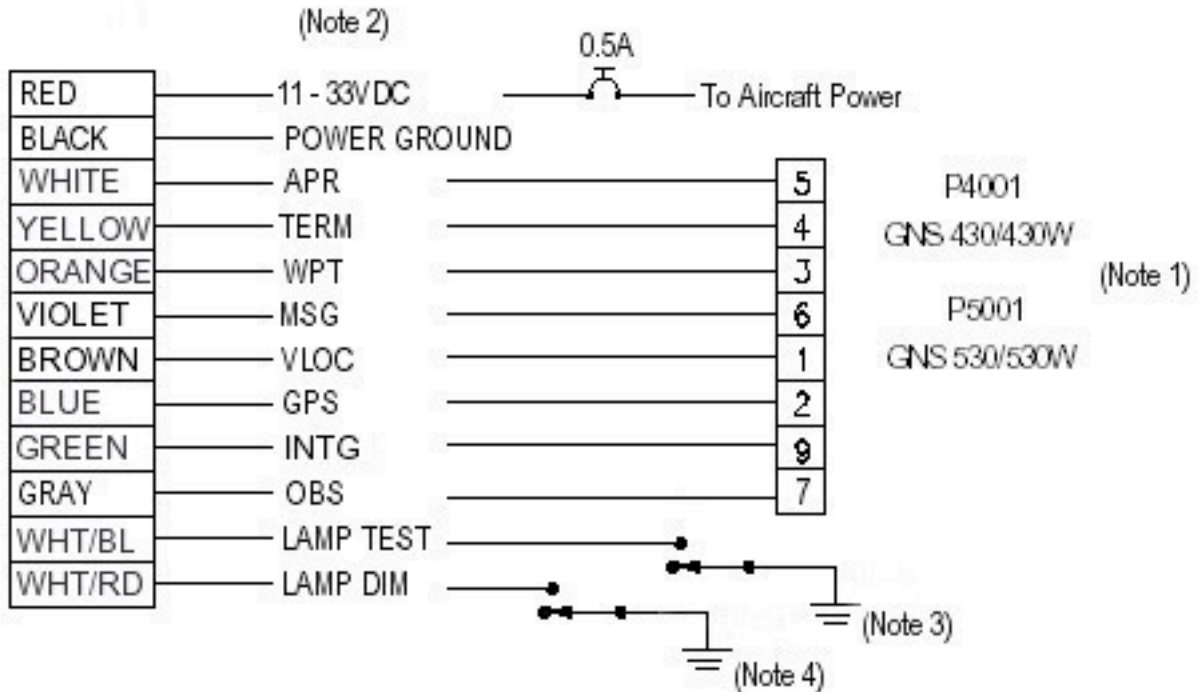
Appendix A

MECHANICAL INSTALLATION



Appendix B

WIRING / INTERCONNECT INFORMATION



Notes

- 1) Garmin GNS430W, and GNS530W Pin Out is Provided for Reference Only. Refer to Appropriate Manual for Actual Installation.
- 2) All Wiring Shall Be 24 Awg Unless Otherwise Specified.
- 3) Momentary Switch Required for Test Function.
- 4) Alternate Switch Required For Manual Dimming Function.

The DWA2000 Annunciator can not be installed in parallel with separate annunciator indicators unless external blocking diodes are installed. Refer to wiring example below.

Recommended blocking diode – Fairchild SB380

WARNING

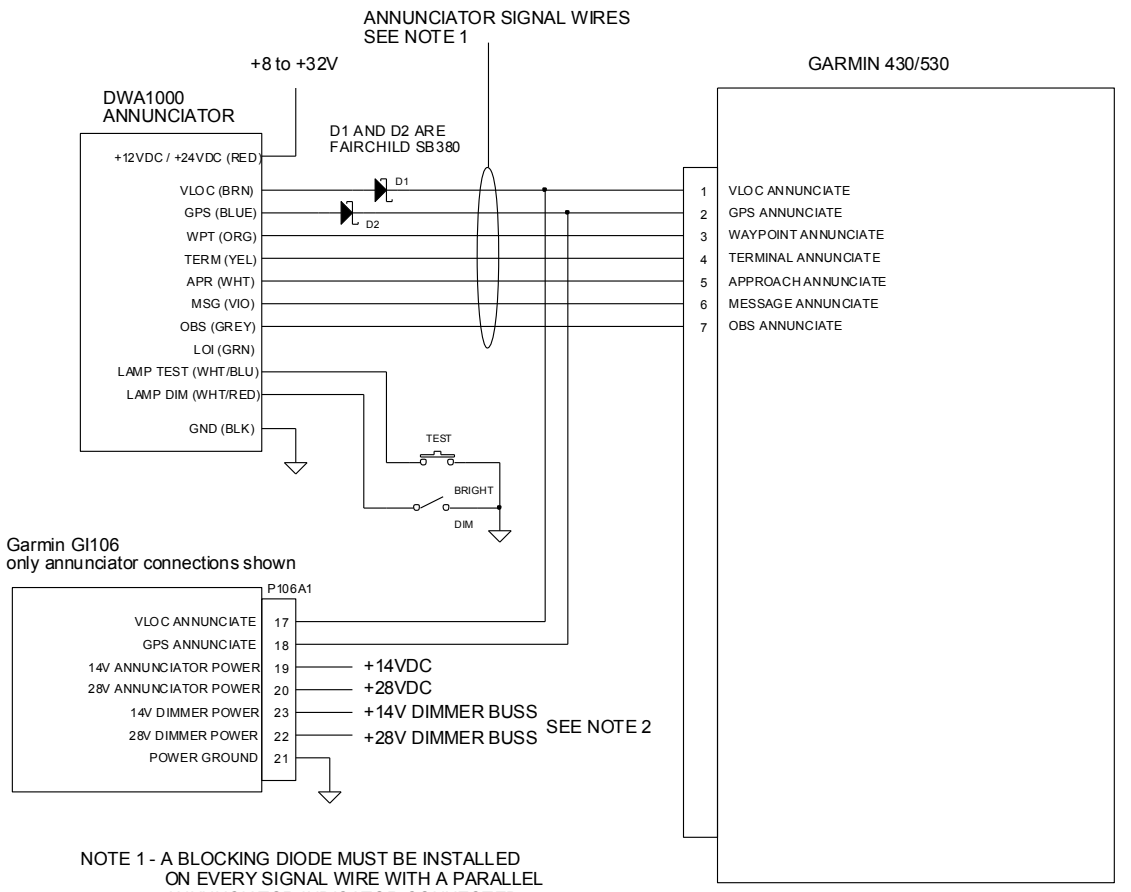
FAILURE TO INSTALL AN EXTERNAL BLOCKING DIODE TO SIGNAL WIRES WITH PARALLEL ANNUNCIATOR CONNECTIONS WILL DAMAGE THE UNIT.

IMPORTANT INSTALLATION NOTE

The DWA2000 Annunciator can not be installed in parallel with separate annunciator indicators unless external blocking diodes are installed. Refer to wiring example below.

Recommended blocking diode – Fairchild SB380

WARNING
FAILURE TO INSTALL AN EXTERNAL BLOCKING DIODE TO SIGNAL WIRES WITH PARALLEL ANNUNCIATOR CONNECTIONS WILL DAMAGE THE UNIT.



- NOTE 1 - A BLOCKING DIODE MUST BE INSTALLED ON EVERY SIGNAL WIRE WITH A PARALLEL ANNUNCIATOR INDICATOR CONNECTED. RECOMMENDED DIODE IS FAIRCHILD SB380
- NOTE 2 - SEE GARMIN INSTALLATION MANUAL FOR PROPER CONNECTIONS TO PIN 22. DO NOT CONNECT DIMMING PINS TO DWA1000 DIMMING SWITCH

WIRING EXAMPLE
 ONLY ANNUNCIATOR CONNECTIONS SHOWN