AVIDYNE

AXP340 Mode S Transponder
PILOT GUIDE

Pg	Chg
Cover.. .	0
Page #..	0
TOC-1..	0
1……	0
2…….	0
3…….	0
4…….	0
5…...	0
6……	0
7……	0
8….	0
9……	0
10….	0
11…..	0
12…..	0
13…..	0
14…..	0
15…..	0
16…..	0
17…..	0
18…..	0
19…..	0
Index…	.0
Inside Back Cover	0
Outside Back Cove	.0

TABLE OF CONTENTS

Deleted: 3
Deleted: 4
Deleted: 5
Deleted: 5
Deleted: 5
Deleted: 5
Deleted: 5
Deleted: 5
Deleted: 6
Deleted: 6
Deleted: 7
Deleted: 8
Deleted: 8
Deleted: 9
Deleted: 9
Deleted: 9
Deleted: 10
Deleted: 10
Deleted: 11
Deleted: 13
Deleted: 14
Deleted: 14
Deleted: 14
Deleted: 15
Deleted: 15
Deleted: 16
Deleted: 16

SYSTEM OVERVIEW

This manual assumes that the pilot is appropriately licensed, is proficient in operation of the aircraft and its equipment, and is in compliance with all Federal Aviation Regulations (FARs).

All images contained in this manual are for reference use only, and are subject to change.

Avidyne strongly recommends that pilots use the AXP340 system only under VFR conditions until completely familiar with its operation and use.

Boxed areas marked as **NOTE** within this manual identify certain situations or areas of operation having safety implications. While it is important for the operator to be familiar with all of the information in the manual, it is essential to the safe use of the AXP340 that pilots give careful attention to the material contained within these **NOTE**s.

AXP340 Mode S ADS-B Out Transponder

The AXP340 is a panel-mount Mode S transponder with support for 1090 MHz Automatic Dependent Surveillance Broadcast (ADS-B) Extended Squitter (ES), also known as “ADS-B Out” that meets all the requirements for Mode S elementary surveillance transponders for both IFD and VFR flight.

The AXP340 transmits up to 240 watts and responds to both legacy Mode A/C interrogations and to Mode S interrogations from both ground radar and airborne collision avoidance systems. It transmits the required ADS-B Out signals including GPS-derived position along with ground track, ground speed, and altitude information.

FUNCTIONAL OVERVIEW

The Avidyne AXP340 Mode S ADS-B Transponder supports the following functions:

- Mode C transponder operations;
- Mode S transponder operations;
- ADS-B Out compliant;
- Flight Timer;
- Stopwatch;
- Altitude Monitor;
- Flight ID reporting.

COOL FEATURE

ADS-B Compliance
When combined with any of Avidyne's TAS6X0A ADS-B capable Traffic Advisory Systems, and an ADS-B compliant GPS source and display (e.g. Avidyne IFD540 or 440), the combined system will meet the full 1090 MHz ADS-B compliant mandate.

AXP340 Transponder

DISPLAY

The display shows the operating mode of the transponder, the reported pressure altitude, and the current squawk code. The reply indicator is active when the transponder replies to interrogations and the IDENT indicator is active when the bezel IDENT button is pressed.

The reported altitude is displayed as a Flight Level, which is the pressure altitude in hundreds of feet. When non-standard atmospheric conditions apply, this may not match the altimeter indicated altitude, but will be correctly displayed by the ATC radar.

BEZEL CONTROLS

SELECTOR KNOB

The selector knob on the right side of the front panel is used to select data such as characters for Flight ID or move through the menu options. Pressing the selector knob confirms the selection or selection of the options presented. A label on the right side of the display describes the action when the selector knob is pressed.

NUMERIC BUTTONS

The numeric buttons are used to select a new Squawk code or flight ID numbers. Pressing buttons 0 through 7 will immediately edit the current squawk code unless in flight ID edit.

CLR

Press the CLR button to return to original settings or back space through partially complete data entry or reverse through a menu.

IDENT

Press the IDENT button when ATC instructs you to “Ident” or “Squawk Ident”. This activates the ident pulse in the transponder for 18 seconds. “IDENT” will appear in the display.

VFR

Pressing the VFR button sets the transponder to the pre-programmed regional VFR code. Pressing the button again restores the previous squawk code.

Pressing the VFR button while in Flight ID edit changes the Flight ID to the pre-programmed ID set up during configuration of the transponder.

FUNC

Pressing the FUNC button provides access to the flight timer, stopwatch, Flight ID editing, ADS-B monitor (depending on installation), altitude monitor and front panel dimming.

POWER ON/OFF

The AXP340 will automatically power on when avionics power is applied and will display the Avidyne logo, product identification and software version information while the unit is self-testing.

AXP340 Initialization Screen

Following a successful power-on self-test, the AXP340 will transition to Standby mode (STBY) and present the squawk code and Reported Altitude display page.

The AXP340 will automatically transition to ALT mode during takeoff roll.

To manually power the AXP340 off, press and hold the MODE button for at least 3 seconds. A countdown timer will be displayed on the left side of the display and the unit will completely power down upon reaching 0. To manually power the AXP340 on following a manual power off, press and hold the MODE button for approximately 1 second.

Manual Power Off Method

MODE CONTROL

The MODE button also controls the operation mode of the transponder.

The following table shows the progression through the states:

ALT The transponder will respond to all interrogations.
ON The transponder will respond to all interrogations, but altitude reporting is suppressed.
SBY The transponder is on, but will not reply to any interrogations.

When airborne, the transponder should always be set to ALT unless otherwise directed by Air Traffic Control. Aircraft installations that include a gear squat switch will automatically select GND on landing or while taxiing.

SQUAWK CODE ENTRY

Press any of the numeric buttons (0 through 7) to start modifying the squawk code. A new squawk code is set when the fourth digit is entered. If the code entry is not completed within 7 seconds, the changes are ignored and the previous code restored.

Some standard squawk codes are listed below

1200	VFR code in the USA
7000	VFR code commonly used in Europe
7500	Hijack code
7600	Loss of communications
7700	Emergency code

ADDITIONAL FUNCTIONS

FLIGHT TIMER

The Flight Timer (labelled “Flight Time”) records the time for which the transponder has been powered on and operating in flight mode – either ON or ALT. Press the FUNC button to display the Flight Timer.

Flight Timer Function Display

Pressing the CLR button resets the flight time counter. Pressing the selector knob starts or stops the flight timer. Pressing the FUNC button moves to the next screen and leaves the flight timer in the current state.

STOPWATCH

The stopwatch can be used as a convenient timer.

Stopwatch Function Display

Press the FUNC button to display the stopwatch. Pressing the selector knob starts and stops the timer. Pressing the CLR button resets the timer.

FLIGHT ID ENTRY

Select the Flight ID edit screen using the FUNC button.

Flight ID Entry Function Display

The display shows the alpha numeric characters selected via the rotary selector knob or numeric buttons. When the correct character is shown in the flight ID section of the screen, press the selector knob to accept and advance to the next digit. When the selector knob is pressed on the last digit or a space, the new Flight ID will replace the previous value. If a button is not pressed for 7 seconds, the changes are ignored and the previous code restored.

Flight ID Entry In-Process Example

The Flight ID should correspond to the aircraft call sign entered on your flight plan. If no flight plan is active, the aircraft registration should be used as your Flight ID. Use only letters and digits. If the Flight ID is less than 8 characters long, entering a blank character will end it.

ALTITUDE MONITOR

The Altitude Monitor activates an audio annunciator or annunciator light (depending on installation) when the aircraft pressure altitude differs from the selected altitude by more than

200 feet. Press the FUNC button to display the altitude monitor enable screen.

Altitude Monitor Function Display

Pressing selector knob toggles the altitude monitor at the current altitude. A two (2) second press of the selector knob captures the present pressure altitude and enables the altitude monitor.

When altitude monitoring is in use, the deviation height will be shown along with the "ABOVE or "BELOW" to indicate the aircraft height relative to the target altitude.

Deleted: ¶

ADS-B MONITOR

The ADS-B Monitor is only available on installations that include an ADS-B position source. The ADS-B Monitor provides a display of the position information that is being transmitted in ADS-B position reports. This can provide confirmation that the correct information is being transmitted, particularly where the GPS source is remote from the transponder.

ADS-B Monitor Function Display

In the event that valid position information is NOT available from the GPS, the latitude and longitude display will be replaced by

dashes; if no valid latitude and longitude is shown then ADS-B position information is NOT being transmitted.

Loss of ADS-B position information will also result in a WARNING message being displayed.

BRIGHTNESS AND LIGHTING CONTROLS

The following table describes the means available by which to control the display and bezel backlighting/brightness:

Control Method	Comments
Dimming Bus	If set up to use the dimming bus in the Configuration pages at time of installation, then both the bezel and the display brightness/backlighting will be controlled via the cockpit dimming bus controls, typically a dimming rheostat.
Ambient Light Sensor	If set up to use the ambient light sensor that is embedded in the AXP340 bezel from the Configuration pages at time of installation, then both the bezel and the display brightness/backlighting will be automatically controlled via internal software algorithms in response to measured ambient light conditions.
Manual Control (display only)	Accessible via the FUNC key on the AXP340 front panel. Once the LCD Brightness page is displayed, a scale of 1 to 10 is controllable via the bezel selector knob.

ALERTS

ALERT MESSAGES

If the transponder detects a problem, the screen will indicate WARNING and a brief statement of the problem. Depending on the nature of the problem, your transponder may not be replying to interrogations. Note the message on the screen and pass that information to your avionics maintenance organization. The WARNING message should clear when the event has cleared. Press CLR to clear the message at any time; if the fault is still present the message may reappear.

FAULT ANNUNCIATION

If the transponder detects an internal failure, the screen will indicate FAULT and a brief statement of the problem. No replies will be made to interrogations when a fault is detected.

Some FAULT indications can be recovered by switching the transponder off and back on again, although in all cases a FAULT code implies that there is a fault with the transponder or the installation. Note the FAULT message at the bottom of the screen and pass that information to your avionics maintenance organization.

CONFIGURATION MODE

The system is configured when it is first installed by your avionics supplier. Configuration items include the Mode S aircraft address, the interface to the other aircraft systems (e.g. external ident input, weight on wheels input, external standby input, serial altitude output, Gray Code and serial altitude inputs, etc), the aircraft category, and the pre-programmed values for VFR squawk code. To view or change these settings you must use Configuration Mode and described in the product Installation Manual.

NOTE
Configuration Mode Do not use Configuration Mode in-flight. Check with your avionics installer before changing the configuration.

To enter configuration mode, hold down the FUNC button whilst switching on the transponder. Configuration items can be changed using the selector knob or numeric buttons for data input. Press the selector knob to accept the selection. Pressing FUNC advances to the next configuration item.

When configuration is complete, switch the transponder off. When it is switched back on the transponder will use the new configuration.

LOW TEMPERATURE OPERATION

The AXP340 is certified to operate correctly down to -25C, but at low temperatures the display may be impaired. On a cold day you may need to wait for the cockpit to warm up to ensure normal operation.

SOFTWARE UPDATES

The AXP340 is a software-enabled transponder and all anticipated software updates can be performed at your avionics shop.

PLUG AND PLAY DETAILS

The AXP340 is plug & play compatible with the King KT-76/76A transponder. This means it can literally be installed in a KT-76/76A tray and no further action or wiring is required. All functions described in this manual will be supported in that case.

Website There is a dedicated website that provides more information on this product at http://www.axp340.com

FAQs http://www.avidyne.com/downloads/products/AXP340/FAQs.pdf

Service Hotline A hotline has been established to service questions or issues regarding Avidyne products. The U.S. Toll Free number is 1-888-723-7592. International toll free numbers are listed at http://www.avidyne.com/contact/intphones.asp

Email Customer/product support issues can be emailed as well

- Europe – support@avidyneeurope.com
- Australia & Asia – support@avidyneaustralasia.com
- Everywhere else should email techsupport@avidyne.com

When calling or emailing for product-related help, please have the following information available, if able:

Customer Name/Account Information

Aircraft tail number, AXP340 serial number, and software versions.

A good description of the problem or question.

WARRANTY: AVIDYNE WARRANTS THE PRODUCT MANUFACTURED BY IT AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF TWENTY-FOUR (24) MONTHS FROM DELIVERY TO THE INSTALLER. A COMPLETE COPY OF THE WARRANTY DATA IS ACCESSIBLE VIA THIS WEB ADDRESS: WWW.AVIDYNE.COM/PRODUCTS/AXP340/INDEX.ASP

AVIDYNE CORPORATION

55 Old Bedford Road
Lincoln MA 01773

P 781 402 7400 | **F** 781 402 7599
Toll Free 800-AVIDYNE (800 284 3963)
www.avidyne.com

http://www.avidyne.com/products/AXP340/index.asp

P/N 600-00302-000 Rev 00