Altitude Alert / Super Clock

(ASC-5A)

Operating Instructions

OI 1104961

11/4/96
Rev C: 7/14/97

You must read this manual before installing or operating the instrument. This manual contains warranty and other information that may affect your decision to install this product and/or the safety of your aircraft.

Electronics International Inc. ®

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ASC-5A
Important Safety Notice

********** Must Read **********

If you think it is not important to read this manual, you're wrong! This manual contains important information that may affect the safety of your aircraft.

Read the Warranty / Agreement. There is information in the Warranty / Agreement that may alter your decision to install this product. If you do not accept the terms of the Warranty / Agreement, do not install this product. This product may be returned for a refund. Contact Electronics International inc. for details.

The accuracy of the "ALT." readout is dependent upon the Altitude Encoder accuracy and the ASC-5A barometric pressure setting. Most FAA approved Altitude Encoders are accurate to +/- 125 feet. The ASC-5A barometric pressure setting will affect the accuracy of the displayed altitude by +/- 100 feet for each .1" of mercury the ASC-5A Barometric Pressure setting is in error of the actual barometric pressure. Your aircraft altimeter should always be your primary reference to determine your altitude.

It is possible for any instrument to fail thereby displaying inaccurate high, low or jumpy readings. Therefore, you must be able to recognize an instrument failure and you must be proficient in operating your aircraft safely in spite of an instrument failure. If you do not have this knowledge, contact the FAA or a local flight instructor for training.

The pilot must understand the operation of this product before flying the aircraft. Do not allow anyone to operate the aircraft that does not know the operation of this product. A copy of this manual must be kept in the aircraft at all times.

Contents

Warranty / Agreement

Electronics International Inc. warrants this instrument and system components to be free from defects in materials and workmanship for a period of one year from the user invoice date. Electronics International Inc. will repair or replace any item covered under the terms of this Warranty provided the item is returned to the factory prepaid.

1. This Warranty shall not apply to any product that has been repaired or altered by any person other than Electronics International Inc., or that has been subjected to misuse, accident, incorrect wiring, negligence, improper or unprofessional assembly or improper installation by any person. This warranty does not cover any reimbursement for any person's time for installation, removal, assembly or repair. Electronics International retains the right to determine the reason or cause for warranty repair.

2. This warranty does not extend to any machine, vehicle, boat, aircraft or any other device to which the Electronics International Inc. product may be connected, attached, interconnected or used in conjunction with in any way.

3. The obligation assumed by Electronics International Inc. under this warranty is limited to repair, replacement or refund of the product, at the sole discretion of Electronics International Inc.

4. Electronics International Inc. is not liable for expenses incurred by the customer or installer due to factory updates, modifications, improvements, upgrades, changes, or any other alterations to the product that may affect the form, fit, function or operation of the product.

5. Personal injury or property damage do to misinterpretation or lack of understanding this product is solely the pilots responsibility. The pilot must understand the operation of this product before flying the aircraft. Do not allow anyone to operate the aircraft that does not know the operation of this product. Keep the Operating Manual in the aircraft at all times.

6. E. I. Inc. is not responsible for shipping charges or damages incurred under this Warranty.

7. No representative is authorized to assume any other liability for Electronics International Inc. in connection with the sale of Electronics International Inc. products.

8. If you do not agree to and accept the terms of this warranty, you may return the product for a refund.

This Warranty is made only to the original user. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES OR OBLIGATIONS: EXPRESS OR IMPLIED. MANUFACTURER EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. PURCHASER AGREES THAT IN NO EVENT SHALL MANUFACTURER BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS OR LOSS OF USE OR OTHER ECONOMIC LOSS. EXCEPT AS EXPRESSLY PROVIDED HEREIN, MANUFACTURER DISCLAIMS ALL OTHER LIABILITY TO PURCHASER OR ANY OTHER PERSON IN CONNECTION WITH THE USE OR PERFORMANCE OF MANUFACTURER'S PRODUCTS, INCLUDING SPECIFICALLY LIABILITY IN TORT.

ASC-5A
Operating Instructions

General Description:

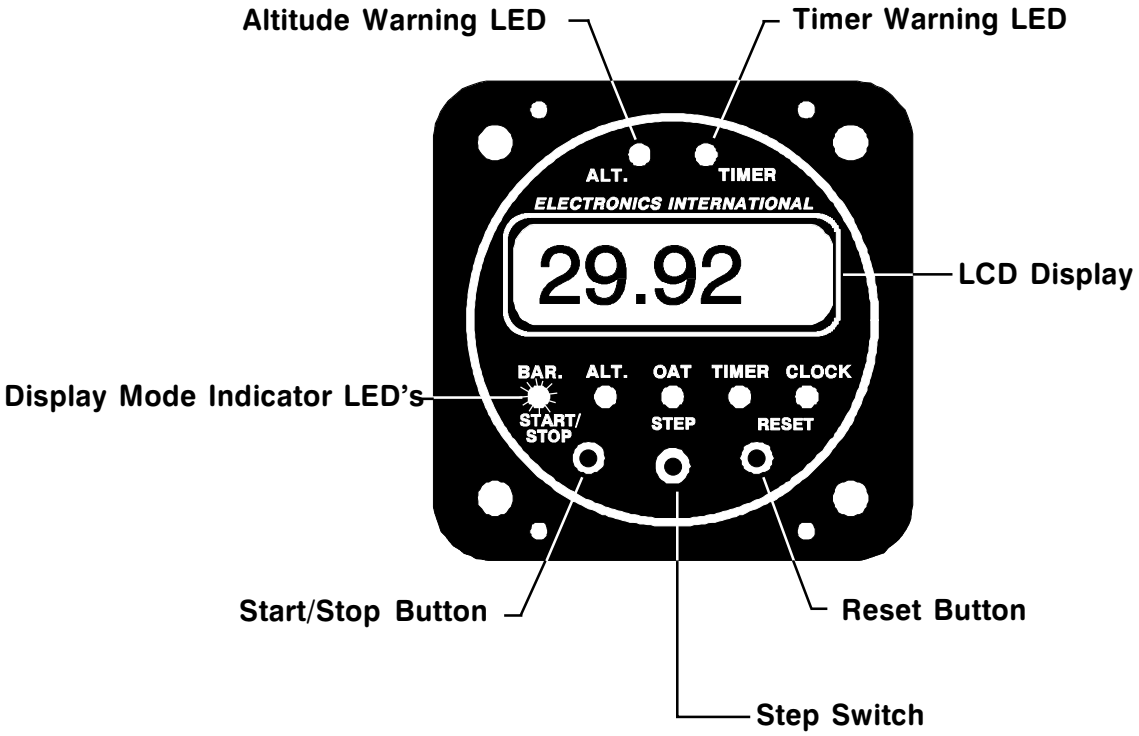
The ASC-5A is an Altitude Alert/Super Clock instrument packaged in a 2.5" by 2.5" by 3.65" depth case. The instrument uses a quick disconnect circular connector to allow the ASC-5A to be removed from the instrument panel at any time. The ASC-5A comes with an OAT extension cable and probe. The ASC-5A connects to your aircraft's existing Altitude Encoder. The ASC-5A uses a clock IC incorporating a 10 year lithium battery.

The ASC-5A has the following five display modes:

1. "BAR." - This mode displays the Barometric Pressure as set by the pilot. Current barometric pressure data must be used in order for the ASC-5A to display accurate altitude information.

2. "ALT." - This mode displays the Encoder Altitude or Assigned Altitude depending on how the ASC-5A was configured during Power-up programming. Push and hold the "START/STOP" Button to display the Encoder Altitude (preceded by an "E") or the Assigned Altitude (preceded by an "A") depending on the ASC-5A configuration. Encoder Altitude data is sent to the ASC-5A and to ATC through your Transponder. The ASC-5A Encoder Altitude readings are calculated from pressure altitude (read from your Altitude Encoder) and Barometric Pressure (set by the pilot).

   In the "ALT." mode you may program an Assigned Altitude to alert you when it is time to level off and to alert you if you deviate from your programmed Assigned Altitude. Also, you may program an Approach Altitude to alert you when you have reached MDA, DH, pattern altitude, wheels down altitude or any altitude you wish.



In addition, by pushing and holding the "RESET" Button down, Density Altitude will be displayed preceded with a "d". Density Altitude is calculated from OAT and pressure altitude.

3. "OAT" - This mode displays Outside Air Temperature in degrees Fahrenheit ('F) or degrees Celsius ('C). Push the "RESET" Button to toggle the display between 'F and 'C.

4. "TIMER" - In the "TIMER" mode the ASC-5A may be programmed to display an Up or Down Timer. The Up Timer will continue to run whether the Up or Down Timer is being displayed. Also, the Up Timer will start automatically when your aircraft reaches an elevation of 300 feet above the ground. In this way the timer acts as a Flight Timer. When the Up Timer is being displayed, a pilot programmable Recurring Alarm may be set to alert you at appropriate time intervals. Example: If the alarm is set for 30 minutes, you will get an alarm at 30 minutes, 60 minutes, 90 minutes, etc. This alarm can be used to remind you to check your fuel level, course, position or instruments at set time intervals. The yellow Warning LED marked "TIMER" over the digital display will "blink" when the programmed time interval is reached. The "START/STOP" and "RESET" Buttons control this Timer.

   When the Down Timer is being displayed, the start time may be set. When the Timer reaches 0:00, the yellow Warning LED marked "TIMER" over the digital display will "blink." The "START/STOP" and "RESET" Buttons control this Timer. The Down Timer will only run when it is displayed.

5. "CLOCK" - In this mode the ASC-5A will display the Local Clock or the Zulu Clock. If the Local Clock is being displayed an "L" will appear in the lower right corner of the digital display. Push the "RESET" Button to toggle the display between the Local and Zulu Clock.

Operating Features and Display Modes:

1. Digital LCD Display and LED Display Mode Indicators:

The digital LCD display is easy to see in direct sunlight. If the digital LCD display backlight has been permanently powered up (as recommended), the display will be easier to see during low ambient light conditions and at night.

During night operation the green LED Display Mode Indicators may be too bright. If so, turn the panel light rheostat up and the LED's will dim. The two yellow Warning LEDs will always be displayed at full intensity. The ASC-5A may be connected to Electronics International's CP-1 (LED Intensity Control Pot). If this is the case, the CP-1 will control the intensity of the LEDs.

2. "ALT." Warning LED:

The "ALT." Warning LED located over the digital display will blink for the following alarms:

A. Level Off Alarm - When your altitude reaches 100 to 300 (determined by the Assigned Deviation setting) from your pilot programmed Assigned Altitude, the "ALT." Warning LED will "blink." Once this alarm has been acknowledged and turned off (by pushing any button or switch), it will be reset when your current altitude reaches 500 feet above or below the programmed Assigned Altitude.

B. Assigned Deviation Alarm - If your altitude deviates more than 100 to 300 feet (determined by the Assigned Deviation setting) above or below the pilot programmed Assigned Altitude, the "ALT." Warning LED will "blink." Once this alarm has been acknowledged and turned off (by pushing any button or switch), it will be reset when your current altitude is within 100 to 300 feet (determined by the Assigned Deviation setting) of the Assigned Altitude setting for 8 seconds.

C. Approach Altitude Alarm - If your altitude drops to the pilot programmed Approach Altitude setting or below, the "ALT." Warning LED will "blink." Once this alarm has been acknowledged and turned off, it will be reset when your current altitude reaches 300 feet above the Approach Altitude setting.

Push any button or switch to stop the blinking and turn off the "ALT." Warning LED. The "ALT." Display Mode section of this manual explains more about the operation of these alarms.

3. "TIMER" Warning LED:

If the ASC-5A Timer is set up as an Up Timer, the "TIMER" Warning LED located over the digital display will "blink" when the UP Timer reaches the pilot programmed Recurring Alarm setting or a multiple of this setting. Example: If the alarm is set for 30 minutes, you will get an alarm at 30 minutes, 60 minutes, 90 minutes, etc. If the ASC-5A Timer is set up as a Down Timer, the "TIMER" Warning LED located over the digital display will "blink" when the Timer reaches 0:00.

Push any button or switch to stop the blinking and turn off the "TIMER" Warning LED. The "TIMER" Display Mode section of this manual explains more about the operation of these alarms.

4. Power-Up:

When the aircraft Master Switch is turned on, the ASC-5A will perform a self-diagnostics test, display "88:88" and flash the yellow Warning LEDs. This allows you to check the Warning LED's and the LCD display for proper operation.

After power-up, the ASC-5A will "blink" the Barometric Pressure (BAR.) LED, and display the last Barometric Pressure setting. The "BAR." LED will continue to "blink" until any button or switch is pushed. The blinking "BAR." LED is intended to be a reminder for the pilot to update the ASC-5A with the current Barometric Pressure.

5. "BAR." (Barometric Pressure) Display Mode:

By pushing the "STEP" Switch to the right or left, you can select the various display modes. In the "BAR" Mode, the ASC-5A will display Barometric Pressure in inches of mercury or in millibars. To program the Barometric Pressure, perform the following steps:

A. Select the "BAR" Display Mode.

B. Momentarily push both the "START/STOP" and "RESET" Buttons at the same time. The two left digits will "blink." You are ready to set the Barometric Pressure.

C. Set the Barometric Pressure using the following procedure:

a) Select the Digit to be programmed - Only the digit that is blinking can be changed. Push the "START/STOP" Button to "blink" the next digit to the left and push the "RESET" Button to "blink" the next digit to the right.

b) Increase or Decrease a Blinking Digit - Move the "STEP" Switch to the right to increase the blinking digit by one. Move the "STEP" Switch to the left to decrease the blinking digit by one.

c) To Exit - To exit the "BAR." Programming Mode, momentarily push both the "START/STOP" and "RESET" Buttons at the same time.

6. "ALT" (Altitude) Display Mode:

By pushing the "STEP" Switch to the right or left, you can select the various display modes. In the "ALT." Mode, the ASC-5A will display "OFF" until your Altitude Encoder has warmed up and is transmitting valid altitude data. This usually takes no more than 5 minutes. After warmup, the ASC-5A will display the Encoder Altitude or Assigned Altitude depending on how the ASC-5A was configured during Power-up programming.

A. Configured to Display Encoder Altitude - When the "ALT." Mode is selected the ASC-5A will display your Encoder Altitude (current altitude) in thousands of feet (example: 2.3 = 2,300 feet). With this configuration the pilot can see the same altitude transmitted to ATC (via the Transponder) at a glance. This altitude is calculated from your Altitude Encoder output (pressure altitude) and the current "BAR." (Barometric Pressure) setting. This calculation is done in the same manner your altimeter corrects its altitude reading with the current barometric pressure setting. The "BAR." setting must be accurate in order for the displayed altitude to be accurate. For altitudes above 18,000 feet the ASC-5A will display Pressure Altitude (altitude reference to 29.92" of mercury).

Also, the ASC-5A can display the programmed Assigned Altitude in the "ALT. display mode. The Assigned Altitude is the altitude to which you wish to climb (or descend) and maintain. To display the Assigned Altitude, push and hold the "START/STOP" Button. The Assigned Altitude will be displayed with an "A" in front of the digits and it will be displayed in thousands of feet (example: A10.3 = 10,300 feet). The Assigned Altitude is programmed in the "ALT." Mode as described later in this section.

If your current altitude is 100 to 300 below the programmed Assigned Altitude (determined by the Assigned Deviation Setting), a "fly to" bar will appear in the upper left corner of the digital display. If your current altitude is 100 to 300 feet above the programmed Assigned Altitude, a "fly to" bar will appear in the lower left corner of the digital display. Figure 1 is a graphic representation of the alarms and annunciators available in the "ALT." Display Mode during a typical flight.

Also, the ASC-5A can display Density Altitude in the "ALT. display mode. To display Density Altitude, push and hold the "RESET" Button. Density Altitude will be displayed with a "d" in front of the digits and it will be displayed in thousands of feet (example: d10.3 = 10,300 feet). Density Altitude is calculated from the current pressure altitude and OAT readings.

B. Configured to Display Assigned Altitude - When the "ALT." Mode is selected the ASC-5A will display the programmed Assigned Altitude in thousands of feet (example: 2.3 = 2,300 feet). With this configuration the pilot can see the altitude to which he/she wishes to climb (or descend) and maintain at a glance. The pilot can see his/her Encoder Altitude (current altitude) by pushing and holding the "START/STOP" Button down. The Encoder Altitude will be displayed with a "E" in front of the digits and it will be displayed in thousands of feet (example: E10.3 = 10,300 feet).

If your current altitude is 100 to 300 below the programmed Assigned Altitude (determined by the Assigned Deviation Setting), a "fly to" bar will appear in the upper left corner of the digital display. If your current altitude is 100 to 300 feet above the programmed Assigned Altitude, a "fly to" bar will appear in the lower left corner of the digital display. Figure 1 is a graphic representation of the alarms and annunciators available in the "ALT." Display Mode during a typical flight. (Note: The ASC-5A is configured to display Encoder Altitude for Figure 1.)

Also, the ASC-5A can display Density Altitude in the "ALT. display mode. To display Density Altitude, push and hold the "RESET" Button. Density Altitude will be displayed with a "d" in front of the digits and it will be displayed in thousands of feet (example: d10.3 = 10,300 feet). Density Altitude is calculated from the current pressure altitude and OAT readings.

In the "ALT." Mode there are two pilot programmable altitudes that may be set. The first one is the Assigned Altitude. This is the altitude to which you wish to climb (or descend) and maintain. On power-up the Assigned Altitude will be set to "00.0." A "00.0" setting will disable the Assigned Altitude, the "fly to" bars and any alarms associated with the Assigned Altitude. If the Assigned Altitude is set for anything other than "00.0", when your current altitude is within 100 to 300 feet (determined by the Assigned Deviation setting) of the Assigned Altitude the yellow "ALT." Warning LED will "blink." This is intended as a Level Off Alarm. Once you reach the Assigned Altitude (+/- 100 to 300 feet) for 8 seconds the Deviation Alarm will be activated. If you deviate more than 100 to 300 feet (determined by the Assigned Deviation setting) from the Assigned Altitude, the yellow "ALT." Warning LED will "blink." Programming the Assigned Deviation setting is described in the Power-up Programming section of this manual.

The second pilot programmable altitude is the Approach Altitude. When your current altitude drops to the Approach Altitude the yellow "ALT." Warning LED will "blink." This alarm may be used to alert you of MDA, DH, pattern altitude, wheels down or for any altitude alert you wish.

The Assigned Altitude and Approach Altitude may be programmed in the "ALT." Mode using the following steps:

A. Momentarily push both the "START/STOP" and "RESET" Buttons at the same time. The thousands of feet digit will "blink." A bar in the upper left corner of the digital display indicates you are programming the Assigned Altitude.

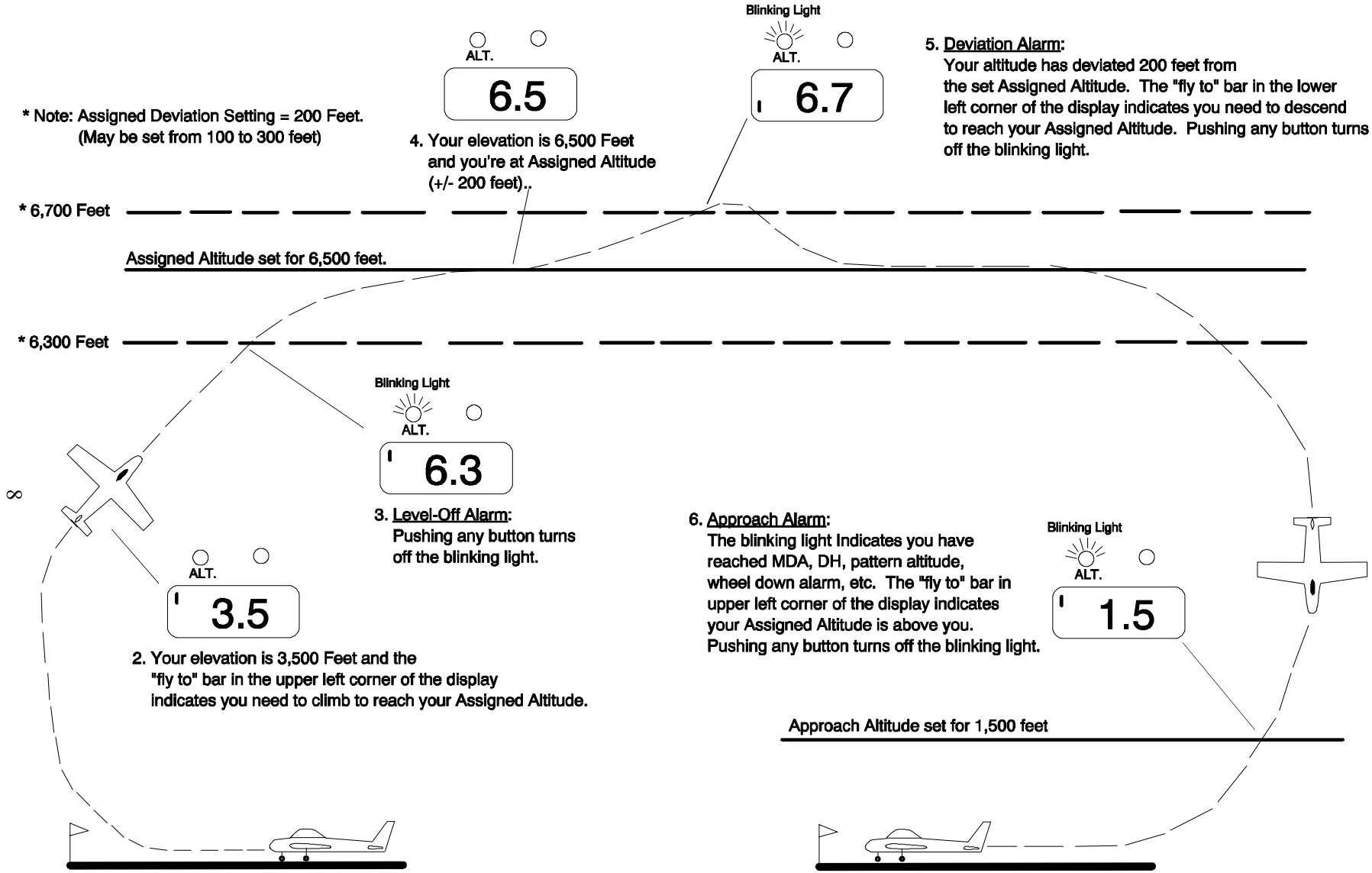
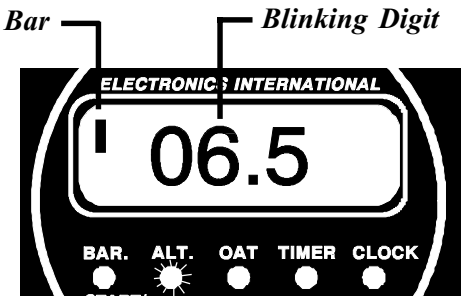


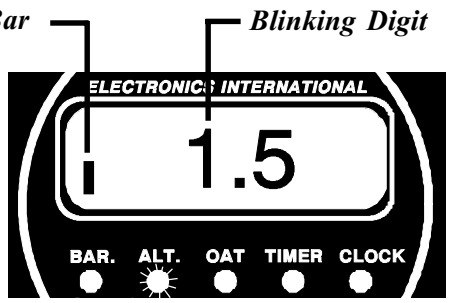
Figure 1 (0228961)

B. Set the Assigned Altitude and the Approach Altitude using the following procedure.



a) Select the Digit to be programmed - Only the digit that is blinking can be changed. Push the "START/STOP" Button to "blink" the next digit to the left and push the "RESET" Button to "blink" the next digit to the right.

b) Increase or Decrease a Blinking Digit - Move the "STEP" Switch to the right to increase the blinking digit by one. Move the "STEP" Switch to the left to decrease the blinking digit by one.



c) Change Functions (Assigned Altitude to Approach Altitude) - When you are programming the Assigned Altitude, there will be a bar in the upper left corner of the digital display. When you are programming the Approach Altitude, there will be a bar in the lower left corner of the digital display. To program the Approach Altitude continue to push the "RESET" Button until the bar in the lower left corner of the digital display appears. To go back to programming the Assigned Altitude, continue to push the "START/STOP" Button until the bar in the upper left corner of the digital display is showing.

d) To Exit - To exit the "ALT." Programming Mode, momentarily push both the "START/STOP" and "RESET" Buttons at the same time.

Important Safety Note: The accuracy of the "ALT." readout is dependent upon the Altitude Encoder accuracy and the Barometric Pressure ("BAR.") setting. Most FAA approved Altitude Encoders are accurate to +/- 125 feet. The Barometric Pressure ("BAR.") setting on the ASC-5A will affect the accuracy of the displayed altitude by +/- 100 feet for each .1" of mercury the ASC-5A Barometric Pressure setting is in error of the actual barometric pressure. Your aircraft altimeter should always be your primary reference to determine your altitude.

7. "OAT" (Outside Air Temp) Display Mode:

By pushing the "STEP" Switch to the right or left, you can select the various display modes. In the "OAT" Mode, the ASC-5A will display Outside Air Temperatures in degrees Fahrenheit ('F) or degrees Celsius ('C). To toggle the display between 'F and 'C push the "RESET" Button. If the reading is in 'C, a "c" will show at the right of the reading (example: "18c" = 18 degrees C).

8. "TIMER" Display Mode:

By pushing the "STEP" Switch to the right or left, you can select the various display modes. In the "TIMER" Mode, the ASC-5A will display the current time on the Timer. The "START/STOP" and "RESET" Buttons control this Timer. The Timer may be configured as an Up or Down Timer. Timer operation for each configuration is described below. The Up Timer will continue to run when the Down Timer is selected. When the Up Timer is selected the Down Timer is stopped and reset.

Up Timer

As an Up Timer, push the "RESET" Button to stop the Timer and reset the time to 0:00 (minutes : seconds). Push the "START/STOP" Button to toggle the start and stop of this Timer. The Up Timer will start running automatically when your altitude reaches 300 feet above ground level even if the Up Timer is not selected. In this way the Up Timer acts as an automatic Flight Timer. The Up Timer will continue to run when the Down Timer is selected.

When the he Up Timer is selected it has a pilot programmable Recurring Alarm. This alarm may be set from 0:00 to 99:59 (minutes : seconds). If the time on the Up Timer reaches the Recurring Alarm setting, the yellow "TIMER" Warning LED will "blink." Pushing any button will stop the blinking LED without starting, stopping or resetting the Timer. This alarm will reoccur at multiple intervals of the Recurring Alarm setting. Example: For a setting of 30 minutes, you will get an alarm at 30 minutes, 60 minutes, 90 minutes, etc. This alarm can be used as a reminder to check fuel levels, flight plan, instruments, etc., at regular intervals during the flight.

When the Up Timer has reached 59 minutes and 59 seconds, the display will switch from minutes and seconds to hours and minutes and an "/Hr" will appear in the upper right corner of the display. Anytime you see "/Hr" in the display the reading is in hours and minutes; otherwise, it is in minutes and seconds.

Down Timer

As a Down Timer, push the "RESET" Button to stop the Timer and reset the time to the pilot programmed Start Time. Example: If the Start Time was set to 30 minutes, the "RESET" Button will set the time to 30:00. Push the "START/STOP" button to toggle the start and stop of this Timer. When the Down Timer counts down to 0:00 the yellow "TIMER" Warning LED will "blink." Pushing any button will stop the blinking LED without starting, stopping or resetting the Timer.

The Start Time may be set from 0:00 to 99:59 (minutes : seconds). For time set over 59 minutes and 59 seconds the Down Timer will display in hours and minutes and an "/Hr" will appear in the upper right corner of the display. Anytime you see "/Hr" in the display, the reading is in hours and minutes; otherwise, it is in minutes and seconds.

To program the Recurring Alarm/Start Time and to configure the Timer for an Up or Down Timer, perform the following steps while in the "TIMER" mode:

A. Momentarily push both the "START/STOP" and "RESET" Buttons at the same time. The far left digit will "blink." For an Up Timer you will be programming the Recurring Alarm and for a Down Timer you will be programming the Start Time.

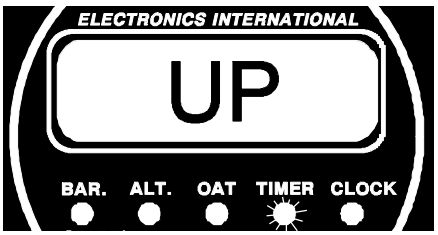
B. Set the Recurring Alarm/Start Time using the following procedure.

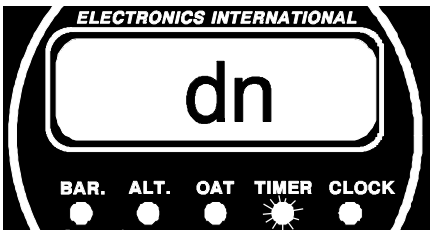
a) Select the Digit to be programmed - Only the digit that is blinking can be changed. Push the "START/STOP" Button to "blink" the next digit to the left and push the "RESET" Button to "blink" the next digit to the right.

b) Increase or Decrease a Blinking Digit - Move the "STEP" Switch to the right to increase the blinking digit by one. Move the "STEP" Switch to the left to decrease the blinking digit by one.

c) Change Functions (Recurring Alarm to "Up" or "dn" Configuration) - To configure the Timer for an Up or Down Timer push the "RESET" Button until the display shows "UP" or "dn". Use the "STEP" Switch to alternate between "UP" and "dn". To return to programming the Recurring Alarm/Start Time, push the "START/STOP" Button.

d) To Exit - To exit the "TIMER" Programming Mode, momentarily push both the "START/STOP"





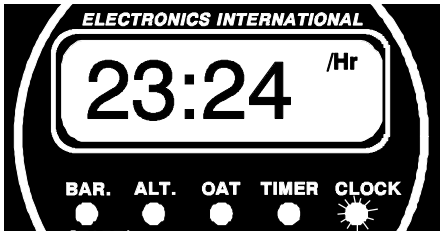
and "RESET" Buttons at the same time.

9. "CLOCK" Display Mode:

By pushing the "STEP" Switch to the right or left, you can select the various display modes. In the "CLOCK" Mode, the ASC-5A will display the Local or the Zulu Clock. To alternate the display between the Local and Zulu Clock, push the "RESET" Button. If the Local Clock is being displayed, an "L" will show in the lower right corner of the display. Since the display is in hours and minutes, "/Hr" will be displayed the upper right corner of the display.

You may program the Local Clock to display in a 12 or 24-hour format using the following procedure:

Local Clock Displayed

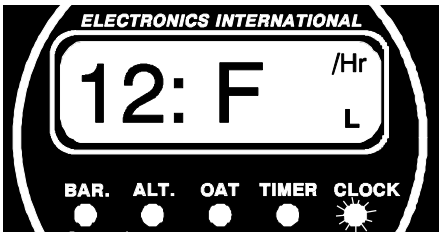


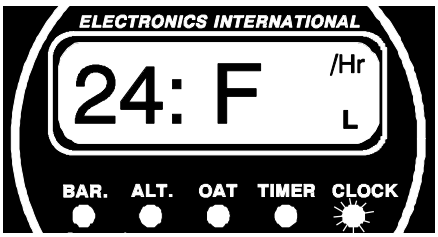
Zulu Clock Displayed

A. Select the "CLOCK" Display Mode.

B. Momentarily push both the "START/STOP" and "RESET" Buttons at the same time. The display will show "12: F" or "24: F" with an "L" displayed in the lower right corner.

C. To toggle the display between "12: F" and "24: F", push the "STEP" Switch to left or right.





D. To exit, momentarily push both the "START/STOP" and "RESET" Buttons at the same time.

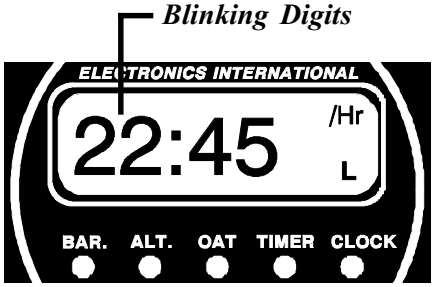
Power-up Programming:

During power-up you may enter the Power-up Programming Mode. In this mode you can set the Local Clock, Zulu Clock, Assigned Deviation, Altitude Display Configuration, Barometric Pressure Configuration and Minutes Lock Configuration. To enter the Power-up Programming Mode perform the following steps:

A. With the aircraft power off, push and hold both the "START/STOP" and "RESET" Buttons and turn the aircraft power on. The far left hours digits will be blinking. An "L" will be showing in the lower right corner of the display indicating you are setting the Local Clock. The Local and Zulu Clocks are always set in a 24-hour format.

B. Set the Local Clock using the following procedure.

a) Select the Digit to be programmed - Only the digit that is blinking can be changed. Push the "START/STOP" Button to "blink" the next digit to the left and push the "RESET" Button to "blink" the next digit to the right.

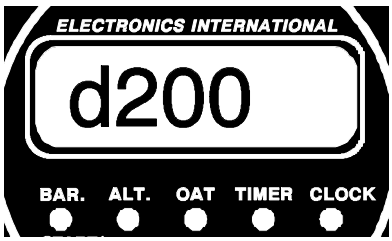


Programming Local Clock

b) Increase or Decrease a Blinking Digit - Move the "STEP" Switch to the right to increase the blinking digit by one. Move the "STEP" Switch to the left to decrease the blinking digit by one.

c) Change Functions (Local to Zulu to Assigned Deviation to Altitude Display Configuration to Barometric Pressure Configuration to Minutes Lock Configuration) - To display and set the Zulu Clock, push the "RESET" Button until the "L" in the lower right corner disappears. Use the "STEP" Switch to increase or decrease a blinking digit.

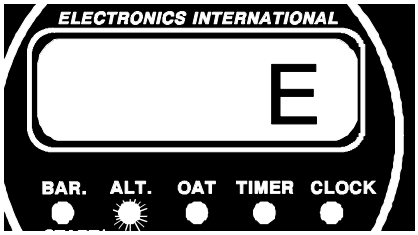
Programming Zulu Clock



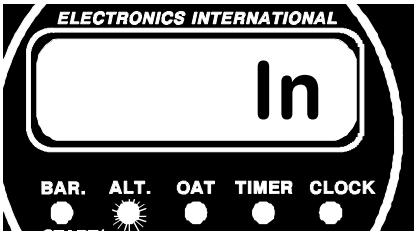
Programming Assigned Deviation

To display and set the Assigned Deviation setting, push the "RESET" Button until you see a "d" in front of the display (example: "d200" = a Assigned Deviation setting of 200 feet). Use the "STEP" Switch to set the Assigned Deviation from 100 to 300 feet.

To display and set the Altitude Display Configuration, push the "RESET" Button until you see an "A" or "E" in the display. Use the "STEP" Switch to toggle the display between "A" and "E." The "A" indicates the ASC-5A will display the Assigned Altitude when the "ALT." Mode is selected and the "E" indicates the ASC-5A will display the Encoder Altitude (current altitude) when the "ALT." Mode is selected.



Programming Display Configuration



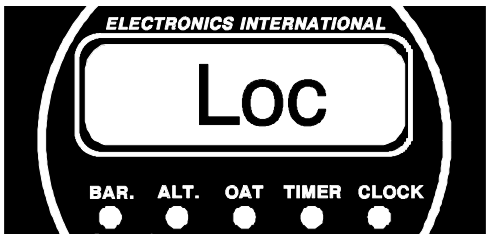
Programming Barometric Pressure Configuration

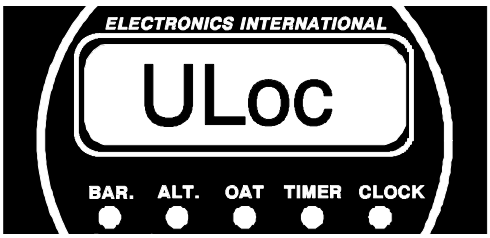
To display and set the Barometric Pressure Configuration, push the "RESET" Button until you see an "bAr" or "In" in the display. Use the "STEP" Switch to toggle the display between "bAr" and "In". The "bAr" indicates the ASC-5A will display the Barometric Pressure in millibars when the "BAR." Mode is selected and the "In" indicates the ASC-5A will display the Barometric Pressure in inches of mercury when the "BAR." Mode is selected.

To go back to programming the Altitude Display Configuration, Assigned Deviation setting, Zulu Clock or Local Clock, continue to push the "START/STOP" Button until you get the appropriate display.

To display and set the Minutes Lock Configuration, push the "RESET" Button until you see an "Loc" or "ULoc" in the display. Use the "STEP" Switch to toggle the display between "Loc" and "ULoc." The "Loc" indicates the Zulu and Local minutes will be locked together. (i.e.: The Zulu and Local minutes will always read the same. If you change one, the other will automaticly be changed.) If you operate your aircraft only in one hour time zones, set the display to "Loc." In this configuration when the Local Clock is set to a standard the Zulu Clock minutes will automaticly be set to the correct time.

If you operate your aircraft in half and one hour time zones, set the display to "ULoc." In this configuration the Local and Zulu Clock work independent of each other.





To go back to programming the Barometric Pressure Configuration, Altitude Display Configuration, Assigned Deviation setting, Zulu Clock or Local Clock, continue to push the "START/STOP" Button until you get the appropriate display.

d) To Exit - To exit the Power-up Programming Mode, momentarily push both the "START/STOP" and "RESET" Buttons at the same time.

Specifications and Operating Features

Model:

ASC-5A (Altitude Alert/Super Clock)

Case Dimensions:

2.5" x 2.5" x 3.65" depth, 2 1/4" Bezel.

Weight:

Unit Only - 11 Oz.

Environmental:

Meets TSO-C43a and DO-160C

Power Requirements:

7.5 to 35 Volts, 1/10 Amp.

Green Display Mode Indicator LEDs:

The intensity of these LEDs is controlled by the dimming wire. 12 or 24 volts on this wire will dim the LEDs for night operation.

Yellow "ALT." Warning LED:

This LED will blink for the following conditions:

A. Level Off Alarm - When your altitude reaches 100 to 300 (determined by the Assigned Deviation setting) from your pilot programmed Assigned Altitude the "ALT." Warning LED will "blink." Once this alarm has been acknowledged and turned off, it will be reset when your current altitude reaches 500 feet above or below the Assigned Altitude.

B. Assigned Deviation Alarm - If your altitude deviates more than 100 to 300 feet (determined by the Assigned Deviation setting) above or below the programmed Assigned Altitude, the "ALT." Warning LED will "blink." Once this alarm has been acknowledged and turned off, it will be reset when your current altitude is within 100 to 300 feet (determined by the Assigned Deviation setting) of the Assigned Altitude setting for 8 seconds.

C. Approach Altitude Alarm - If your altitude drops to the programmed Approach Altitude setting or below, the "ALT." Warning LED will "blink." Once this alarm has been acknowledged and turned off, it will be reset when your current altitude reaches 300 feet above the Approach Altitude setting.

Push any button or switch to stop the blinking (acknowledge the alarm) and turn off the "ALT." Warning LED.

Yellow "TIMER" Warning LED:

If the ASC-5A Timer is set up as an Up Timer, the "TIMER" Warning LED will "blink" when the Timer reaches the programmed Recurring Alarm Setting or a multiple of this setting. If your ASC-5A Timer is set up as a Down Timer, the "TIMER" Warning LED will "blink" when the Timer reaches 0:00.

Digital Display:

LCD (viewable in direct sunlight), with 12 and 24 volt backlight control wires for night operation. Displays "88:88" on power up.

External Warning Control Line:

Grounds when any yellow Warning LED is blinking. Current should be limited to 2/10 amp.

Display Modes:

BAR. - Displays Barometric Pressure in inches of mercury or millibars.

ALT. - Displays Encoder Altitude or Assigned Altitude determined by the Display Configuration setting. Push the "START/STOP" Button to display Encoder Altitude (displayed with an "E") or Assigned Altitude (displayed with an "A"). Push the "RESET" Button to display Density Altitude (pressure altitude corrected with OAT). Density Altitude will be displayed as "OFF" for OAT readings above 135'F. Pressure Altitude will be displayed for altitudes above 18,000 feet.

OAT - Displays Outside Air Temp in degrees Fahrenheit ('F) or degrees Celsius ('C).

TIMER- Displays the time on the Up or Down Timer. The Up Timer will start automatically when your aircraft reaches an elevation of 300 feet above the ground.

CLOCK- Displays the Local or Zulu Clock.

Maximum Displayed Range or Setting:

BAR. Setting ---------- 28.00 to 32.99 inches of mercury or 999 to 1199 millibars.
Altitude (displayed) -------- -1000 to 30,500 feet.
Assigned Altitude (setting) ---- 0 to 99,900 feet.
Approach Altitude (setting) - 0 to 9,900 feet.
OAT (displayed) ---------- -99'F to 1999'F (-87'C to 999'C).
TIMER (displayed) --------- 00:00 to 17 hours, 59 minutes.
Recurring Alarm/Start Time (setting) - 00:00 to 99 minutes, 59 seconds.

Accuracy:

Altitude: +/- 50 feet plus the accuracy of your Altitude Encoder (typically +/- 125 feet).
OAT: +/- 2% in accordance with TSO-C43a.
Timer: +/- .005% plus +/- .5 second.
Clock: +/- 2 minutes/month.

Resolution:

BAR. ---------- .01 inches of mercury.
Altitude -------- 100 feet.
OAT ---------- 1'F or 1'C.
Timer ---------- 1 second (switches to 1 minute for readings over 59 minutes and 59 seconds).
Clock ---------- 1 minute.

Pilot Programmable Modes:

		Display Modes				
	Power-up	**BAR.**	**ALT.**	**OAT**	**TIMER**	**Clock**
Programming Modes	Set Local Clock	Set Barometric Pressure	Set Target Altitude		Set Recurring Alarm/Start Time	Set Local Clock Format (12 or 24)
	Set Zulu Clock		Set Approach Altitude			
	Set Assigned Deviation					
	Set Altitude Display Configuration					
	Set Barometric Pressure Configuration					
	Set Minutes Lock Configuration					