



D-90169

**OPERATION and MAINTENANCE
MANUAL
MA-10UD TRANSMITTER
(FP-02118)**

Rev 1

January 23, 2008



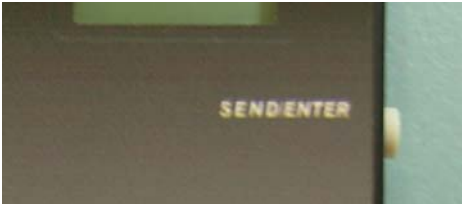



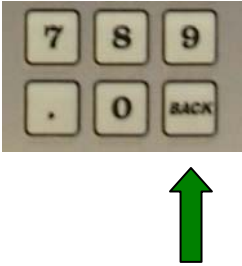

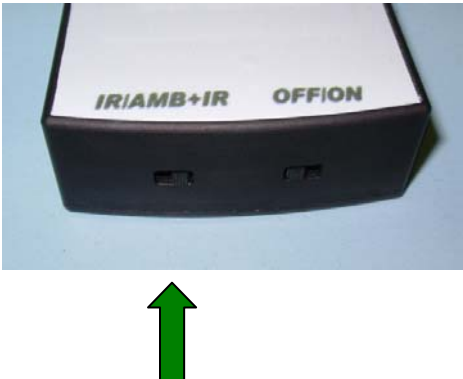
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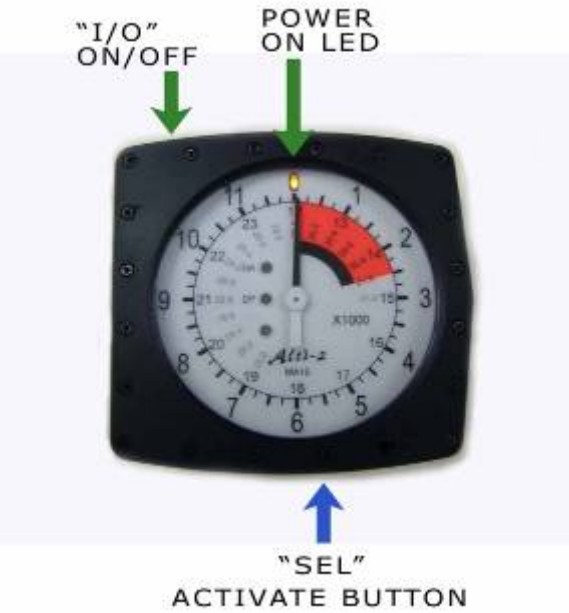
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1.	<p>DESCRIPTION</p> <p>Updates MA-10UD altimeters with drop zone altitude using wireless line of sight communication.</p> <p>Works with MA-10UD Compressed and MA-10UD Linear military altimeters. MA-10 units cannot be updated.</p> <p>Easily accessible batteries (Type AA Lithium)</p> <p>Electroluminescent backlit screen</p> <p>Rugged anodized aluminum enclosure</p> <p>Rain resistant</p> <p>0 to +45 deg C operation</p> <p>The embedded software is updatable.</p>
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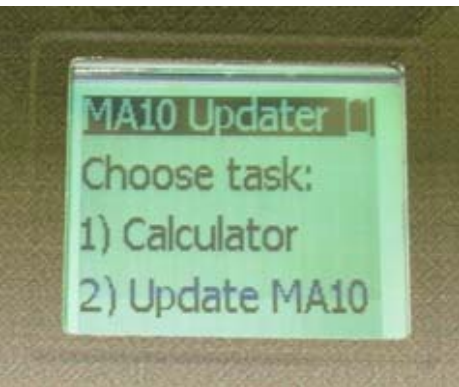

2.	SPECIFICATION	
	Model	MA-10UD Transmitter (FP-02118)
	Scale	To avoid erroneous entry, drop zones outside of -1000 to +25,000 ft are considered invalid.
	Case Material	Anodized Aluminum
	Dimensions	2.74" x 6.75" x 1.102" 69.65 mm x 171.45 mm x 28 mm
	Weight	14 oz (397 g) (including batteries)
	Lens Material - LCD	Toughened Glass
	Lens Material - IR	Abrasion Resistant Polycarbonate
	Lens Replacement	Lenses are factory replaceable.
	Operating Temp Range	0 to +45 deg C +32 to +112 deg F
	Screen	11 Line LCD
	LCD illumination	Electroluminescence
	Back-up Illumination	Not Required
	Batteries Required	4 x AA Lithium Batteries. (Alkaline AA batteries may be used but will result in shorter battery life)
	Battery Life	125 Hrs or minimum of 500 updates
	Low Battery Warning	Battery state indication while powered on
	Water resistance	Rain resistant



3.		<p>CONTROLS</p> <ul style="list-style-type: none">A. Optical LensB. ScreenC. SEND/ENTER buttonD. Numeric keypadE. OFF/ON switchF. EMITTER MODE switch
4.		<p>OPTICAL LENS</p> <p>The optical lens allows transmission of signals to the altimeter being updated.</p>
5.		<p>SEND/ENTER</p> <p>The SEND/ENTER button on the side enters numeric values and sends data to the altimeter being updated.</p>



6.		NUMERIC KEYPAD The numeric keypad is used for making selections from the menus as well as for entering numeric values.
7.		BACK BUTTON The Back button is used to back up in the menu screens, and to correct errors in numeric entries. If held for more than five seconds, it brings up the startup screen.
8.		OFF/ON SWITCH The screen is blank when the unit is off. To turn the unit on slide the power switch to the On position The screen will be illuminated. (There is <u>no</u> auto-shutoff function.)
9.		EMITTER MODE SWITCH The emitter mode switch is located to the left of the OFF/ON switch. It should remain in the AMB+IR position at all times.


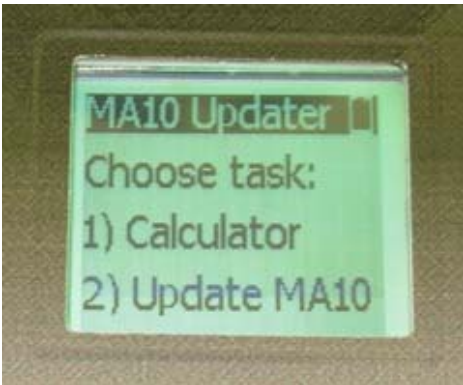
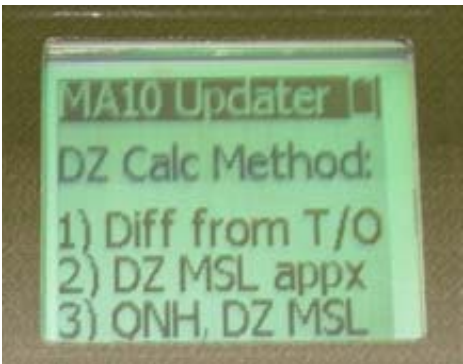

10.		<p>SET DZ ALTITUDE AND BAROMETRIC PRESSURE</p> <p>If the pressure at the target DZ is known it may be directly entered and transmitted to the MA-10UD using the following procedure:</p> <p>(If you need to calculate this pressure, use the CALCULATOR functions described in steps 21, 31 and 40.)</p>
11.	 <p>The diagram shows the front panel of the ALTI-2 altimeter. It features a circular gauge with a red needle and a red arc on the scale. Three buttons are highlighted with arrows: a green arrow pointing down to the top-left button labeled "I/O" ON/OFF, a green arrow pointing down to the top-center button labeled "POWER ON LED", and a blue arrow pointing up to the bottom-center button labeled "SEL" ACTIVATE BUTTON.</p>	<p>Step 1</p> <p>Turn on the MA-10UD.</p> <p>To turn the unit on press and hold the Activate Button marked "SEL" and then press ON/OFF Button marked "I/O".</p>

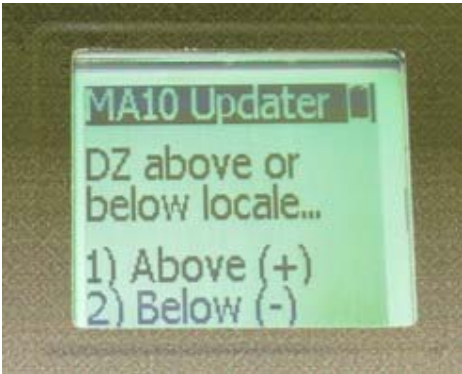


12.	 <p>"PRG" DZ SET UP</p> <p>"SEL" ACTIVATE BUTTON</p>	<p>Step 2</p> <p>Put the MA-10UD in Program Mode:</p> <p>Press the two buttons shown ("PRG" & "SEL" Activate Button), the DZ Altitude set light (DA) will be illuminated.</p>
13.		<p>Step 3</p> <p>If power is already on, press and hold the Back button for at least five seconds to reset the unit and get back to the startup screen.</p> <p>Otherwise, power up the Transmitter by sliding the power switch to the ON position.</p>
14.		<p>Step 4</p> <p>This is the startup screen.</p> <p>Press 1 to continue</p>





15.		<p>Step 4</p> <p>Select units: press 1 for Hg or 2 for mBar.</p>
16.		<p>Step 5</p> <p>Press 2 to select Update MA-10UD.</p>
17.		<p>Step 6</p> <p>Use keypad buttons to input the pressure of the target DZ.</p> <p>When the desired number is displayed, press and release the SEND/ENTER key.</p>

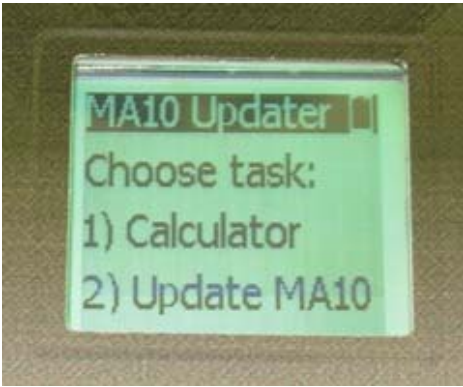
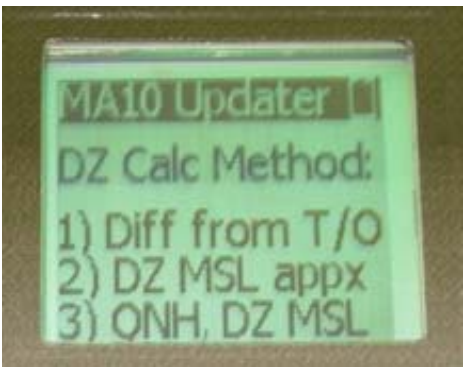


18.		<p>Step 7</p> <p>With the transmitter optical lens pointed toward the MA-10UD face, squared with the face, and no farther than six inches away, press and hold the SEND/ENTER button as shown until the red DA light on the MA-10UD goes out and the MA-10UD needle spins a full revolution.</p> <p>This completes the DZ setup and the altimeter is in RUN mode.</p> <p>NOTE: The altimeter will retain the DZ altitude and pressure settings when the altimeter is turned off.</p> <p>Note: Direct sunlight on the face of the altimeter may affect updating.</p>
19.		<p>When you are finished updating all units, turn off the Transmitter to conserve battery life.</p>




20.		<p>CALCULATOR</p> <p>If your target DZ is close enough to be at the same altimeter setting as your current location but at a different altitude, press 1 to select Diff from T/O and follow the steps in CALCULATOR MODE 1. Proceed to step 21.</p> <p>If your target is at another location and air pressure at target is unknown, but you know the number of feet above sea level for the target DZ, press 2 to select DZ msl (appx) and follow the steps in CALCULATOR MODE 2. Proceed to step 31.</p> <p>If target's QNH (altimeter setting) is available, press 3 to select QNH, DZ MSL and follow the steps in CALCULATOR MODE 3. Proceed to step 40.</p>
21.		<p>CALCULATOR MODE 1</p> <p>If power is already on, press and hold the Back button for at least five seconds to reset the unit and get to the startup screen.</p> <p>Otherwise, power up the Transmitter by sliding the power switch to the ON position.</p>
22.		<p>This is the startup screen.</p> <p>Press 1 to continue.</p>



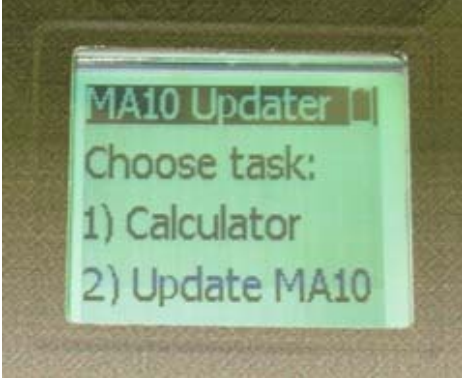

23.		Select units. Press 1 for Hg or press 2 for mBar.
24.		Press 1 to select Calculator.
25.		Select calculator mode 1.
26.		Enter your ambient ground pressure. With the correct number displayed, press the SEND/ENTER button.




27.		<p>Press 1 for Above, or press 2 for Below locale.</p>
28.		<p>Enter the difference in altitude between yourself and your target DZ.</p> <p>With the correct number displayed, press the SEND/ENTER button.</p>
29.		<p>With the transmitter optical lens pointed toward the MA-10UD face, squared with the face, and no farther than six inches away, press and hold the SEND/ENTER button as shown until the red DA light on the MA-10UD goes out and the MA-10UD needle spins a full revolution.</p> <p>Note: Direct sunlight on the face of the altimeter may affect updating.</p>




30.		When you are finished updating all units, turn off the Transmitter to conserve battery life.
31.		CALCULATOR MODE 2 If power is already on, press and hold the Back button for at least five seconds to reset the unit and get to the startup screen. Otherwise, power up the Transmitter by sliding the power switch to the ON position.
32.		Press 1 to continue.
33.		Select units. Press 1 for Hg or press 2 for mBar.



34.		Press 1 to select Calculator.
35.		Select calculator mode 2.
36.		Press 1 for Above 0 MSL, or press 2 for Below 0 MSL.
37.		Enter the number of feet above or below 0 MSL for the target DZ. With the correct number displayed, press the SEND/ENTER button.

38.		<p>With the transmitter optical lens pointed toward the MA-10UD face, squared with the face, and no farther than six inches away, press and hold the SEND/ENTER button as shown until the red DA light on the MA-10UD goes out and the MA-10UD needle spins a full revolution.</p> <p>Note: Direct sunlight on the face of the altimeter may affect updating.</p>
39.		<p>When you are finished updating all units, turn off the Transmitter to conserve battery life.</p>
40.		<p>CALCULATOR MODE 3</p> <p>If power is already on, press and hold the Back button for at least five seconds to reset the unit and get to the startup screen.</p> <p>Otherwise, power up the Transmitter by sliding the power switch to the ON position.</p>

41.		<p>This is the startup screen.</p> <p>Press 1 to continue.</p>
42.		<p>Select units. Press 1 for Hg or press 2 for mBar.</p>
43.		<p>Press 1 to select Calculator.</p>
44.		<p>Select calculator mode 3.</p>

45.		<p>Enter the QNH (altimeter setting).</p> <p>With the correct number displayed, press the SEND/ENTER button.</p>
46.		<p>Press 1 for Above 0 MSL, or 2 for Below 0 MSL.</p>
47.		<p>Enter the height or depth in feet of your DZ above or below 0 MSL.</p> <p>When the desired number is displayed, press and release the SEND/ENTER button.</p> <p>The calculated pressure will be shown.</p>

48.		<p>With the transmitter optical lens pointed toward the MA-10UD face, squared with the face, and no farther than six inches away, press and hold the SEND/ENTER button as shown until the red DA light on the MA-10UD goes out and the MA-10UD needle spins a full revolution.</p> <p>Note: Direct sunlight on the face of the altimeter may affect updating.</p>
49.		<p>When you are finished updating all units, turn off the Transmitter to conserve battery life.</p>
50.		<p>BATTERY REPLACEMENT</p> <p>Step 1</p> <p>Using a medium flat head screwdriver, loosen the screw in the door on the back panel. After a few turns, the screw should be free.</p> <p>Lift the door free of the enclosure.</p>

51.		<p>Step 2</p> <p>Replace batteries with 4 type AA lithium batteries.</p> <p>Observe polarity as shown on the sticker.</p> <p>NOTE: Alkaline batteries may be used, however battery life will be shorter.</p>
52.		<p>Step 3</p> <p>Put the battery door back into position and tighten the screw.</p>
53.		<p>CLEANING</p> <p>Wipe with a damp cloth. Do not use alcohol or solvents.</p>



SERVICING

If the transmitter behaves abnormally or unusually, discontinue use IMMEDIATELY and return to Alti-2, Inc.

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Fax: (386) 943 9303

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Please be sure to include contact information such as Phone Number, Fax Number, and/or email address, and a description of the problem.

Status on your transmitter can be checked by contacting the Alti-2, Inc. Service Department, or by initiating a Request for Repair Status through the Alti-2, Inc. web-page.

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