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# MB10

## Marker Beacon Receiver/ Indicator

Part No. 050-023- (XXXX)

### Pilots Guide

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FAA-Approved, TSO C35d

**NOTICE:** Warranty is not valid unless this product is installed by an Authorized PS Engineering dealer.

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## General Information

The **MB10** is a compact, panel, or blind mounted Marker Beacon Receiver (75 MHz). Please read this manual completely to become familiar with all the features.

## Scope

This manual contains operational instructions for the following PS Engineering units:

Model Number	Part Number	Description
MB10	050-023-0100	Panel Mounted Marker Receiver
MB10R	050-023-0101	Remote Mounted Marker Receiver

## Description

The **MB10** is a 75 MHz Marker Beacon receiver with 3-lamp indication that provides the Marker Beacon signal for the ILS System.

A front panel mode switch allows the pilot to select high or low sensitivity, lamp test, and audio mute.

The MB10R is a remote mounted receiver capable of activat-

ing either panel mounted lamps (not included), an electronic display system, or both.

## SPECIFICATIONS

FAA-Approval	TSC C35d RTCA DO-143
Frequency:	75 MHz Crystal Controlled
Sensitivity:	Capable of: (preset at factory for field application) Low: 1000 $\mu$ Volts (Hard) (360 to 570 $\mu$ V soft) High: 200 $\mu$ Volts (Hard) (130 to 200 $\mu$ V soft)
Selectivity:	-6 dB at $\pm$ 10 kHz -40 dB at $\pm$ 120 kHz
External Lamp Output:	7.5 ( $\pm$ 4 VDC unloaded, at maximum brightness) VDC positive when active, max. current 125 mA
MM Sense:	Active high (4.5 $\pm$ 1.0VDC)
Output impedance:	510 Ohms
Audio Output:	38 mW <1% THD typical
Operating Temperature	-15° to +55° C
Altitude	55,000' unpressurized
Power	11-33 VDC, <0.25 A
Weight	6.5 oz.



## OPERATION

### **Power**

The MB10 is active whenever the avionics bus is energized.

### **Marker Beacon Operation**

The Marker Beacon Receiver uses visual and audio indicators to alert you when the aircraft passes over a 75 MHz transmitter.

The **Blue** lamp, labeled "O", is the Outer Marker lamp and has an associated 400-Hertz 'dash' tone. The lamp and tone will be keyed at a rate of two tones/ashes per second when the aircraft is in the range of the Outer Marker Beacon.

The **Amber** lamp, labeled "M", is the Middle Marker lamp and is coupled with a 1300 Hertz tone. It is keyed alternately with short 'dot' and long 'dash' bursts at 95 combinations per minute.

The **White** lamp, labeled "I", is the Inner marker and has a 3000-Hertz 'dot' tone. The lamp and tone will be keyed at a rate of six times per second.

The audio from the Marker Beacon Receiver is provided to the aircraft audio selector system. To adjust the volume level, there is a service adjustment located on the top of the unit.

A toggle switch is used to set the receiver sensitivity and to test the indicator lamps. Use "**HI**" sensitivity initially. This allows you to hear the outer marker beacon about a mile out. Then switch into Low Sensitiv-

ity mode. "**LO**" sensitivity gives you a more accurate location of the Outer Marker. Holding the MKR switch down for two seconds activates marker test lamp, labeled "T/M" and illuminates all three lamps simultaneously to assure the lamps (internal and external) are in working order. TST does not activate MM autopilot sense output. Releasing the button returns to the low sensitivity.

Pressing the marker mode select (to "T/M") for two seconds will also cause the marker audio to mute for that beacon. The next beacon received will re-activate the audio.

## Warranty and Service

### **Warranty**

In order for the factory warranty to be valid, the installations in a certified aircraft must be accomplished by an appropriately rated FAA- certified avionics shop and authorized PS Engineering dealer. If the unit is being installed by a non-certified individual in an experimental aircraft, a factory-made harness must be used for the warranty to be valid.

PS Engineering, Inc. warrants this product to be free from defect in material and workmanship for a period of one year from the date of retail purchase. During this one year warranty period, PS Engineering, Inc., at its option, will send a replacement unit to the PS Engineering dealer, if the unit should be determined to be defective after consultation with a factory technician. PS Engineering will not ship to the end user under warranty, unless au-

thorized by the dealer.

This warranty is not transferable. Any implied warranties expire at the expiration date of this warranty. PS Engineering SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. This warranty does not cover a defect that has resulted from improper or unreasonable use or maintenance as determined by us. This warranty is void if there is any attempt to disassemble this product without factory authorization. This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state. Some states do not allow the exclusion of limitation of incidental or consequential damages, so the above limitation or exclusions may not apply to you.

### **Factory Service**

The **MB10** is covered by a one-year limited warranty. See warranty information.

Call PS Engineering, Inc. at (865) 988-9800 before you return the unit. This will allow the service technician to provide any other suggestions for identifying the problem and recommend possible solutions.

After discussing the problem with the technician and you obtain a **Return Authorization Number**, ship product to:

PS Engineering, Inc.  
Attn: Service Department  
9800 Martel Road  
Lenoir City, TN 37772  
(865) 988-9800 FAX (865)  
988-6619.

[www.ps-engineering.com/  
support.shtml](http://www.ps-engineering.com/support.shtml)

NOTE:

**PS Engineering is not responsible for units shipped US Mail.**

If no method of payment is provided, the units will be returned COD. If no RMA or description of problem is present, the shipment will be refused.

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