

# PS ENGINEERING<sup>®</sup> INCORPORATED

Sound Quality. Sound Engineering.

9800 Martel Road  
Lenoir City, TN 37772  
www.ps-engineering.com



## PM500EX Low Cost, 4-Place Intercom Pilot's Guide and Operation Manual

202-118-0002

Rev 3

April 2011

***For use in Experimental/LSA/Non-certified aircraft ONLY***  
Not intended for installation in aircraft with standard airworthiness certification. The product warranty is not valid unless this product is installed by an

PS Engineering, Inc. 2011 ©  
Copyright Notice

Copyrighted information in this manual is subject to change without notice. PS Engineering reserves the right to improve or change the products or contents of this manual, without notification of any person or agency. The contents of this pilot's guide may be downloaded, stored and reprinted for personal use provided that this copyright information is included. Commercial use is strictly prohibited. For further information contact the Publications Manager at PS Engineering, Inc., 9800 Martel Road, Lenoir City, TN 37772. Phone (865) 988-9800

## Introduction

Congratulations on your purchase of a PM500EX intercom! We at PS Engineering welcome you to our family.

The PM500EX is a panel mounted, 4-place intercom that offers a low cost alternative for budget minded pilots who still want quality sound and performance. This manual provides information on the operation of the PM500EX. Please read it completely to maximize your enjoyment of its use.

## Description

The PM500EX is a 4-place intercom with individual output amplifiers for the pilot, copilot, and passengers 1 & 2. The VOX (Voice Activated Squelch) circuit prevents mic audio from getting through the intercom until someone speaks. The volume control adjusts the intercom level for all headsets and functions as a PUSH-ON/PUSH-OFF power switch.

The PM500EX has an automatic, fail-safe connection to the aircraft radio. In the event that power to the intercom is lost, an internal relay will immediately connect the pilot's headset directly to the aircraft radio.

A provision for an entertainment input allows the pilot and passengers to listen to music during flight. During intercom activity, this music automatically mutes to allow communications without distraction. Note: the music is NOT muted during radio reception.

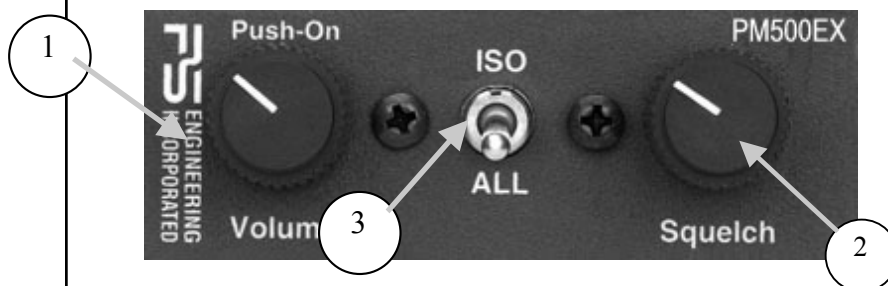
The 2-position switch in the center is an intercom mode selector.

With the PM500EX, both the pilot and copilot have radio transmit capabilities. Only the person who presses their Push To Talk (PTT) will be heard over the aircraft radio. If both pilot and copilot press the PTT, the copilot will override. The pilot regains priority by switching the unit off.

## Specifications

Input power:	12-28 Volts DC
Current Drain:	< 70 mA: Externally fused at 1 Amp
Headphone Impedance:	150-1000 $\Omega$ Typical
Total audio power available:	225 mW
Aircraft Radio Impedance:	1000 $\Omega$ Typical
$\pm 3$ dB Mic Frequency Response:	350 Hz-6000 Hz
$\pm 3$ dB Music Frequency Response:	200 Hz - 15 kHz
Net weight:	8.5 Ounces (.340 kg)
Dimensions:	0.90" H X 2.60" W X 4.85" D (2.2 cm x 6.6 cm x 12.3 cm)

## OPERATING INSTRUCTIONS



Turn the PM500EX on pressing the volume control knob (left knob). This also engages the automatic fail-safe system.

### ***Adjusting The Volume (1)***

The volume control knob (1) adjusts the loudness of the intercom and music for all headsets. Turning the control clockwise increases the audio. Many headsets have volume controls on them. If it becomes necessary to reduce the volume for an individual passenger, the three others should be set at maximum, and the unit volume set for a comfortable level. The individual can then reduce their volume accordingly.

The volume control on the PM500EX does not have any affect the radio volume. This gives added flexibility for communications requirements. Volume control is also not affected by plugging in other headsets.

### ***Adjusting The Squelch Control (2)***

This VOX operated intercom keeps all microphone channels off while the pilot, copilot or passengers are not speaking. This reduces background noise from the aircraft. Only when someone speaks will the microphones automatically turn on, passing the audio through the system.

Set the Squelch control knob (2) by slowly rotating the squelch knob clockwise until you no longer hear the engine noise in the earphones. When the microphone is positioned properly near your lips, normal speech levels should open the channel. When you stop talking, there is a delay of about a second before the channel closes. This prevents closure between words and eliminates choppy communications.

### ***Mode Select (3)***

The center switch (3) has 2- positions that allow the crew to tailor the inter-

com function to best meet the situation. Regardless of configuration, the pilot will always hear the aircraft radio.

**ISO** (Up Position): The pilot is isolated from the intercom and is connected to the aircraft radios only. He will hear only the aircraft radio reception and sidetone (only during radio transmissions). Copilot and passengers will hear the intercom and music but not the aircraft radio receptions or transmissions.

**All** (Down position): All parties will hear the aircraft radio reception and transmissions, intercom, and music. However, during any intercom activity, the music volume automatically decreases. The music volume increases gradually back to the original level after communications have been completed. **The radio traffic will not mute the music.**

NOTE: When either the pilot or copilot PTT is depressed, all microphones are off except for the transmitting one.

## Warranty

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 installation. In order for the warranty to be valid, the unit must be installed by an approved PS Engineering dealer, or a custom wiring harness purchased from PS Engineering. During the warranty period, the unit must be returned to PS Engineering, Inc. and, at their option, it will send a replacement at no charge. The customer is responsible for shipping charges returning the unit to PS Engineering.

This warranty is not transferable. Any implied warranties expire at the expiration date of this warranty. WE 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 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 your state.

## Service

Contact PS Engineering, Inc. at (865) 988-9800 or [www.ps-engineering.com](http://www.ps-engineering.com). A technician may be able to diagnose the problem and offer a solution without the possible need for returning the unit. If the unit does need servicing, you **must** obtain a **return authorization number** from PS Engineering, and ship unit in UPS approved packaging (not US Mail) to:

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

All repairs **MUST** have a contact phone number listed. After the warranty period, PS Engineering offers a flat-fee repair.