

Push To Talk Switches

Applications Note AN-3
p/n 81333

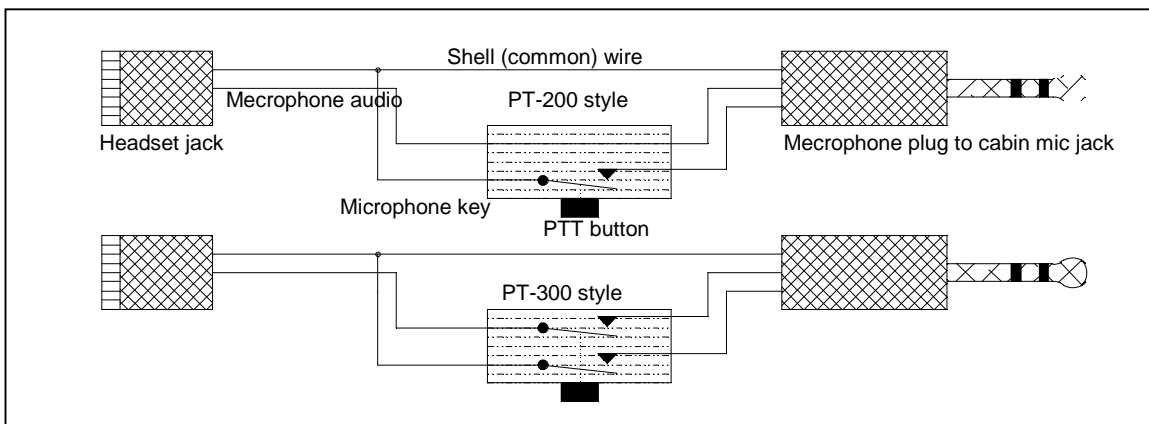


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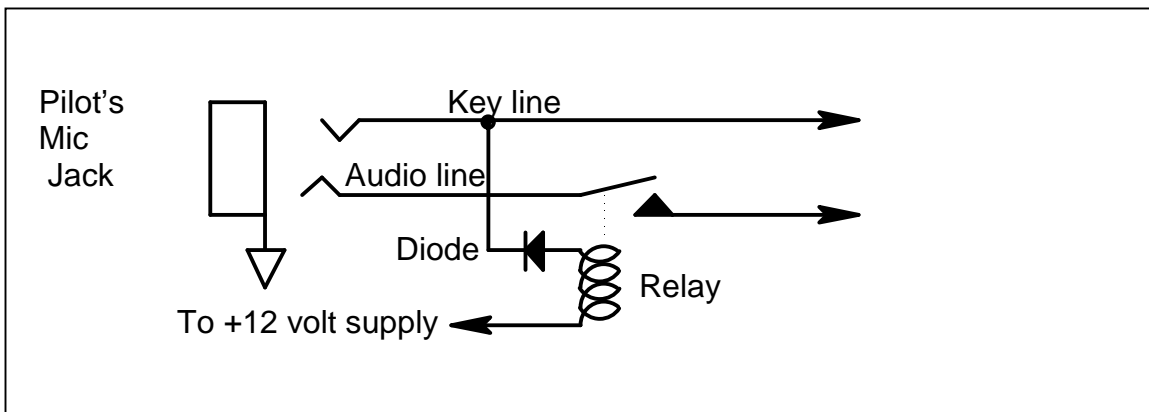
MAIL: 13249 Grass Valley Ave
SHIP: 13993 Downwind Court
Grass Valley CA 95945
(916) 272-2203 (voice & fax)
E-mail: sales@rst-engr.com
Web Page <http://www.rst-engr.com>

The function of a Push-To-Talk Switch (“PTTS”) is to place the aircraft radio into the transmit mode and connect the microphone audio to the transmitter modulator. This is done by grounding the aircraft microphone jack key (tip) line to airframe ground (normally the “shell” of the mic jack). Simultaneous with this grounding, a second set of contacts in newer design PTTS closes the circuit between the microphone audio line and the aircraft microphone jack audio (ring) contact. (See Applications Note AN-2 for a discussion of aircraft mic and phone connectors.)

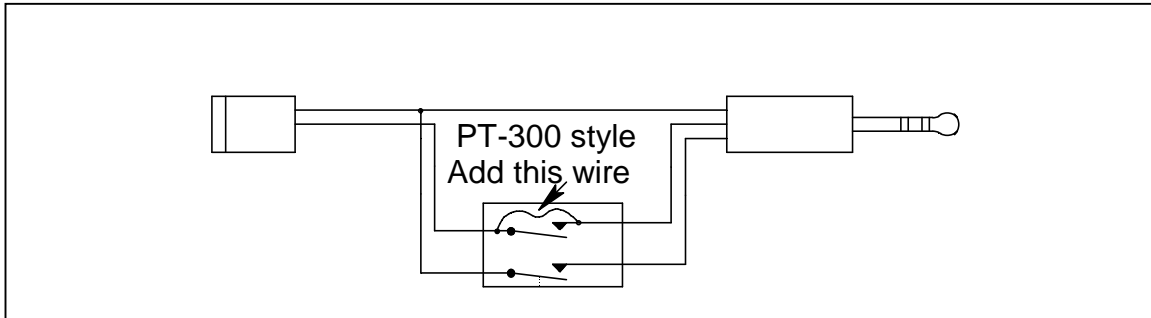
There are two kinds of PTTS. One is the portable “velcro it around the control wheel” style and the other is the small pushbutton integral to the control wheel. Of the portable style, we can break it down still further into the old “PT-200” style that did NOT have a second set of contacts to break the mic audio line in receive, and the newer design “PT-300” series that break both the audio and the key lines in receive.



When using a portable intercom such as the RST-442/445 series, it is absolutely mandatory to use the PT-300 style switches so that the aircraft radio does not load down the pilot’s microphone. If the audio line is not broken during the radio receive mode then (depending on the design of the radio) the pilot’s microphone on the intercom can be dead, distorted, or have no apparent ill effects, and it varies from one radio design to another. Thus, if you intend to use a portable intercom with either the old PT-200 or a factory-mount PTTS in the yoke, you will have to test the intercom with the individual radio to see if you got lucky and have a compatible radio. If not, then you will have to install a relay in the airplane to break the pilot’s mic audio line during receive.



On the other hand, when using an audio selector panel such as the RST-504/506 series, the audio line from the pilot's microphone to the mic jack must **NOT** be broken in the receive mode. If you are using a factory-installed yoke switch or one of the older PT-200 series PTTS, then there is no modification required. If you are using one of the newer PT-300 series switches, then you are going to have to perform a minor modification to the switch in order to use the intercom in the audio selector panel.



One clean and easy way to make it so that it doesn't matter which style PTT switch you have is to mount two pilot microphone jacks in the aircraft (or use the existing hand-microphone jack and wire in a headset jack). Plug the pilot's headset into one of the jacks, the pilot's PTT into the other jack, and there won't be any problem. If you are going to wire your audio panel for pilot and copilot access to the radio, this means FOUR jacks, one for pilot PTTS, one for pilot headset, one for copilot PTTS, and one for copilot headset. Quite frankly, it is a lot easier just to modify the PT-300 series switches than it is to drill holes and mount jacks onto the airplane.

All things considered, it is by far the neatest and cleanest installation for the 504 audio panel to use a simple SPST yoke-mounted pushbutton switch, one for pilot and one for copilot. One of the best designs I've seen uses a small piece of aluminum to mount the switch and a couple of small tapped holes in the control wheel. The wires from the switch go to a "coily cord" and through a grommet in the instrument panel.

