

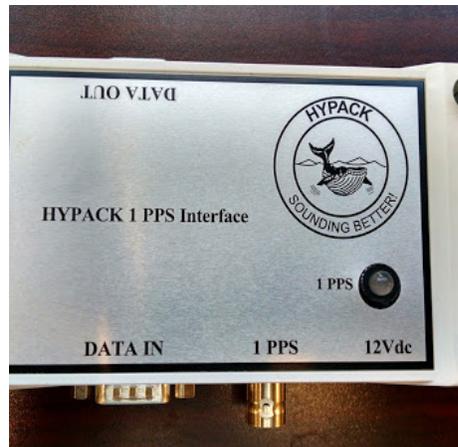


HYPACK
a xylem brand

Sounding Better!

HYPACK PPS Box in Layman's Terms

By Caryn Zacharias



I am sure you are wondering why I am writing about a HYPACK PPS Box in this day and age. Well, believe it or not we get calls every so often on these boxes. The boxes are very simple, but every time I get a call on them, I have to sit back and think. I figured I would share my thoughts with all of you.

First off, what is PPS? PPS stands for Pulse Per Second.

What is a 1 PPS Box? The Box helps amplify the PPS signal from a GPS unit. Some PPS signals are too short to register. The box ramps up the signal for one second and off for one second (like a switch).

When are PPS Boxes needed? A PPS Box is needed when UTC time stamps comes from some devices, but not all. Examples:

- GPS and Motion over serial and Multibeam Sonar is over network with UTC time stamps, then a PPS Box is needed.
- All devices have UTC Time Stamps, a PPS Box is not needed (ie. Multibeam and INS System over Ethernet).

How do I know the 1 PPS Box is working? The light should alternate between red and green every 1 second. If it is a steady red or green or a flickering light, the box is not working properly.

How to connect to the HYPACK PPS Box? The PPS Box needs a PPS signal from either a BNC cable or a Serial Cable from the GPS unit. The PPS signal from the serial cable will come in on either Pin 8 or Pin 9, depending on the GPS unit. In this case, there are jumpers which need to be placed on the correct pin or BNC the PPS signal is coming in on.

By default, a jumper is usually placed on Pin 9.

These boxes can also be setup to be used as a splitter box to take the PPS signal from the GPS via serial and output the PPS via serial to the HYPACK® computer and BNC to a sonar. In order to do this, jumpers must be placed on both pin8 or 9 and the BNC. There was an article written in 2012 specifically on this setup.

http://www.hypack.com/new/portals/1/pdf/sb/09_12/PPS%20Box%20Rerouting%20Trick.pdf

FIGURE 1. Inside of a HYPACK 1 PPS Box: Setup as a Splitter Box, red Jumper on Pin9 and Black Jumper on BNC.



How does the GPS need to be setup? Setup the GPS to output GGA or GGK , etc. You must also configure to output ZDA at 1 Hz only.

Rising or Falling Edge: Depending on the age of your PPS Box, you might see different labels. The image above shows -VE and +VE. You may also see ↑INVERT ↓NORM.

Rising Edge = +VE or ↓NORM

Falling Edge= -VE or ↑INVERT

I hope this 1 PPS Box information helps you understand these boxes a bit more. If you have any questions or concerns please do not hesitate to contact Tech Support at help@hypack.com.