

Smart Coupler Installation - Panel mounted GPS receivers

Wiring the Smart Coupler–

Locate the Smart Coupler harness. It has the following wires to connect:

1. A single red wire. This wire is only used for the New Original version of the coupler. If you have a Smart Coupler II or II LE, cut this wire off and protect the end with shrink tubing or tape. If you have a New Original Smart Coupler, this wire is connected to the GPS OK indicator.
2. A blue wire, a yellow wire and a black wire that are tied together with wire ties.
 - 2a. The blue and black wires are not used. These wires are in common with the power wires that are connected to the DIN connector as described below. Cut them back and protect the ends as above.
 - 2b. Connect the yellow wire to your Nav. lights. When the Smart Coupler senses a voltage over 2.5 volts, it will dim its panel lamps.
3. A multi-conductor cable terminated in a 5 position DIN connector. Although the connector is not used, this cable has the power, ground and data wires that must be connected to the rear of your panel mounted GPS receiver. Cut the connector off, carefully noting the color of the wires connected to pins 1, 2 and 3. If you hold the connector with the soldered connections facing you and the single shield terminal at the bottom, the pins are numbered 1-4-2-3-5 right to left starting from 3:00 o'clock through 12:00 o'clock to 9:00 o'clock. Most cables will have a black wire connected to pin 1 (power), a red wire connected to pin 2 (data out) and a white wire connected to pin 3(ground). The shield is connected to the bottom pin.
 - The black wire now connected to pin 1 of the DIN connector is the power wire. Connect to a fused 12V or 24V power source.
 - The white wire now connected to pin 3 of the DIN connector is the ground wire. Connect to aircraft ground.
 - The red wire now connected to pin 2 of the DIN connector is the GPS data out wire. Connect this to the SERIAL DATA OUT pin at the GPS receiver.
 - The cable shield should be connected to aircraft ground.

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4. A two-conductor cable with terminated in pigtails. These two wires carry the left-right information to the autopilot.

If this is a retrofit, you will already have connected your panel mounted external CDI outputs to the autopilot, perhaps through an autopilot source select switch. Disconnect these wires from the panel-mounted receiver and connect them to the two wires from the Smart Coupler. All course information is now routed through the Smart Coupler.

If this is a new installation, these wires need to be connected to the autopilot. You do not need to connect the panel-mounted receiver's external CDI outputs. Course and heading information is sent from the receiver to the Coupler and then on to the autopilot. If you already have an autopilot source such as a VOR or Loran receiver, you will need to install an autopilot source select switch. This switch must be a 2-pole switch as both wires must be switched.

Make sure you get +left connected to +left and +right connected to +right. The red wire in the Smart Coupler harness is +L while the black wire is +R. Before flying be sure to check the polarity of these wires with the procedure on page 7 or 8 of the User/Installation manual.

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Turning on the receiver's data output–

You must enable the serial data port on your receiver. You will need to specify a format and sometimes a baud rate. The Smart Coupler can understand Aviation format and NMEA-183 v1.5 or NMEA 183 v2.0 formats. Specify either 4800 or 9600 baud, 8 bits, no parity, 1 or 2 stop bits. Aviation format is sometimes called moving map data or ARGUS data.

For the Tremble panel mounted receivers, choose the format from the following list. They are listed descending in order of choice:

- R0, 9600 baud
- R1, 9600 baud
- K0, 9600 baud
- K1, 9600 baud
- R0, 4800 baud
- R1, 4800 baud
- K0, 4800 baud
- K1, 4800 baud