GARMIN.

GARMIN GPS to PC Wiring Instructions

Introduction

This will outline the basics for connecting most GARMIN GPS receivers to a PC serial connector for data transfer. Since the GPS needs to both send and receive information from your PC, the data connection will consist of three wires: Transmit Data (TxD), Receive Data (RxD), and Signal Ground (SG). The SG wire is common for both power and data grounding.

Supplies

- Serial connector- Most PCs on the market use a standard 9 pin male serial port, also referred to as a DB9. Older systems may have a male 25 pin DB25 port. Don't confuse this with the parallel (printer) port, which has a 25 pin female connector on the back of your computer. You will need to obtain the appropriate female connector to connect your computer. Most electronics or computer supply stores should carry this item.

- GPS Power/Data cable- If not standard equipment supplied with your receiver, may be purchased from Garmin or a Garmin dealer.

- Soldering iron & solder

Optional items you may need or use

- DC power source- Check with Garmin, a Garmin dealer, or an electronics supply store.

- Cigarette lighter adapter or extra wire for supplying power to GPS. Check with an automotive or electronic supply store.

- Wire strippers/cutters

- Multimeter- Handy for testing the connections when completed.

Cautions

- *Be certain all cables are disconnected from the GPS unit, PC, and/or power supplies before soldering.*

- *If you do not wish to perform the soldering/wiring steps, please seek the assistance or services of an electronics repair/service shop or comparable professional. When in doubt seek professional assistance.*

- *When soldering, be sure to observe all safety methods and wear the proper protective equipment.*

- *If you are supplying external power to your GPS, be sure to observe the proper voltage ranges for your unit. Failure to do so may result in damage to your GPS! PCs do NOT generate the proper DC voltage to power a GPS unit.*

Assembly Steps

1. Make sure the parts to be soldered are clean and dry. Wiring should be stripped to appropriate lengths to ensure proper fit into the connector. If the serial connector already has wires attached, use appropriate wire connectors for the assembly as opposed to soldering the connections.

2. Refer to the wiring diagram on pages 3-4 which applies to your GPS unit's type of interface connector.

3. Solder the power/data cable Data Out to the Receive Data (RxD) pin 2 of the DB9 (DB25 pin 3)

4. Solder the power/data cable Data In to the Transmit Data (TxD) pin 3 of the DB9 (DB25 pin 2)
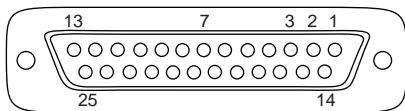
DB25 (Female) - Cable View
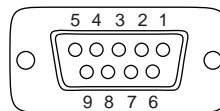
DB9 (Female) - Cable View

5. Solder the power/data cable Ground to the Signal Ground (SG) pin 5 of the DB9 (DB25 pin 7).

> *If you are also supplying external power to the GPS, you will need to split the GPS Signal Ground (SG) wire and attach it to both the PC Signal Ground (SG) pin and the negative (-) portion of your power source. The Ground is common to both power and data. Also, connect the positive (+) power lead to the positive side of your power source at this time. For the voltage ranges & fuse amperages of your GPS unit, please consult the owner's manual specifications.*
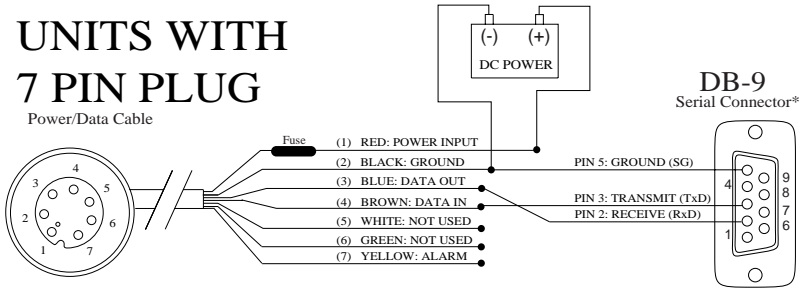
Once the connections are soldered

Connect the power/data cable to the GPS and connect the serial connector to the serial port on the back of your computer. The cable assembly should now be ready to transfer data between your GPS and PC.

If it doesn't work, try checking the following

• All cables are plugged in firmly.

• Continuity of the cable connections (use a multimeter or continuity checker).

• Make sure the serial port on the PC is enabled and not in use by another device. Contact PC maker for assistance.

• Interface on GPS is set properly in order to transfer data. Refer to the GPS User's Guide.

• If you are still having problems, please contact Garmin Customer Service.
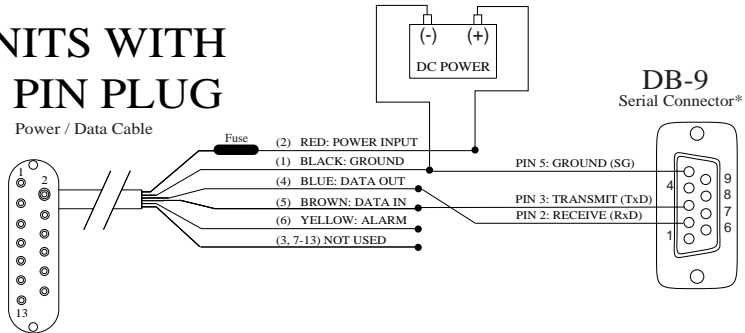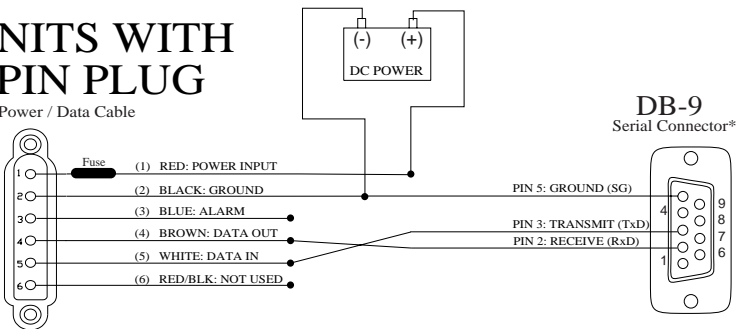
UNITS WITH
7 PIN PLUG

Power/Data Cable

(-) (+)
DC POWER

DB-9
Serial Connector*

Fuse

(1) RED: POWER INPUT
(2) BLACK: GROUND   PIN 5: GROUND (SG)
(3) BLUE: DATA OUT
(4) BROWN: DATA IN   PIN 3: TRANSMIT (TxD)
(5) WHITE: NOT USED   PIN 2: RECEIVE (RxD)
(6) GREEN: NOT USED
(7) YELLOW: ALARM

UNITS WITH
13 PIN PLUG

Power / Data Cable

(-) (+)
DC POWER

DB-9
Serial Connector*

Fuse

(2) RED: POWER INPUT
(1) BLACK: GROUND   PIN 5: GROUND (SG)
(4) BLUE: DATA OUT
(5) BROWN: DATA IN   PIN 3: TRANSMIT (TxD)
(6) YELLOW: ALARM   PIN 2: RECEIVE (RxD)
(3, 7-13) NOT USED

UNITS WITH
6 PIN PLUG

Power / Data Cable

(-) (+)
DC POWER

DB-9
Serial Connector*

Fuse

(1) RED: POWER INPUT
(2) BLACK: GROUND   PIN 5: GROUND (SG)
(3) BLUE: ALARM
(4) BROWN: DATA OUT   PIN 3: TRANSMIT (TxD)
(5) WHITE: DATA IN   PIN 2: RECEIVE (RxD)
(6) RED/BLK: NOT USED

UNITS WITH
4 PIN ROUND PLUG

Power / Data Cable
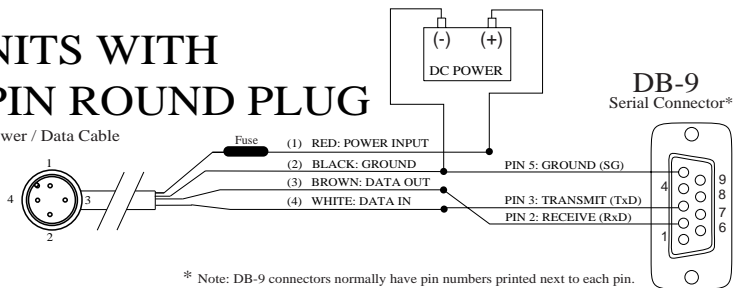
(-) (+)
DC POWER

DB-9
Serial Connector*

Fuse

(1) RED: POWER INPUT
(2) BLACK: GROUND   PIN 5: GROUND (SG)
(3) BROWN: DATA OUT
(4) WHITE: DATA IN   PIN 3: TRANSMIT (TxD)
                            PIN 2: RECEIVE (RxD)

* Note: DB-9 connectors normally have pin numbers printed next to each pin.

3

UNITS WITH
18 PIN PLUG

DC POWER
(-) (+)

DB-9
Serial Connector*

Power / Data Cable

Fuse

(15) RED: POWER INPUT
(18) BLACK: GROUND
(17) BLUE: DATA OUT
(16) BROWN: DATA IN
(11) YELLOW: ALARM
(1-10,12-14) NOT USED

PIN 5: GROUND (SG)

PIN 3: TRANSMIT (TxD)
PIN 2: RECEIVE (RxD)

2 1
6 3
11 7
15 12
18 16

4 9
8
7
1 6
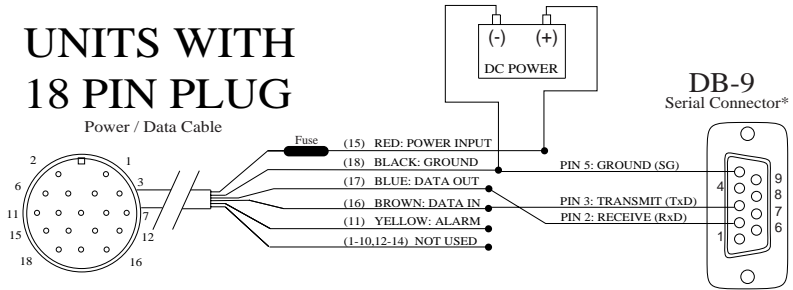
UNITS WITH 4 PIN,
RECTANGLE PLUG

DB-9
Serial Connector*

Data Cable

(4) BLACK: GROUND
(3) WHITE: DATA OUT
(2) GREEN: DATA IN

PIN 5: GROUND (SG)

PIN 3: TRANSMIT (TxD)
PIN 2: RECEIVE (RxD)

(Not used) 1 2 3 4
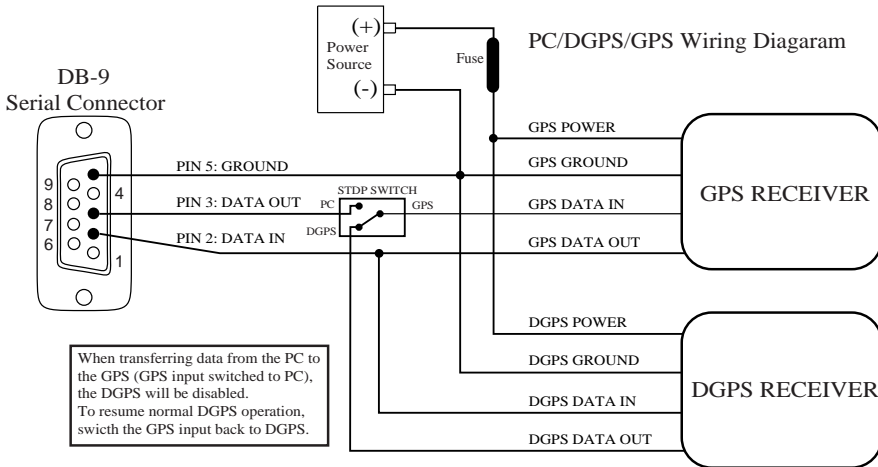
4 9
8
7
1 6
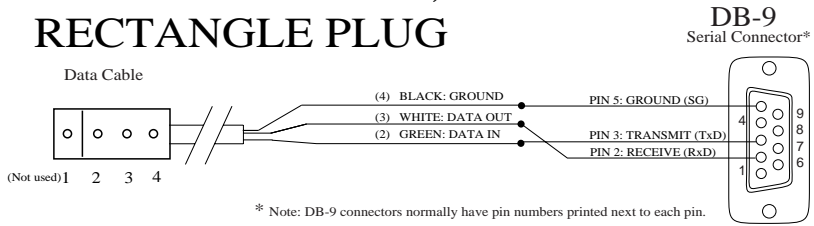
* Note: DB-9 connectors normally have pin numbers printed next to each pin.

Connecting a DGPS, GPS and PC

The wiring will be the same, with one exception. The GPS will only accept data input from one device at a time, but can output data to no more than 3 devices simultaneously. Since the DGPS and PC both need to utilize 2-way communication with the GPS, it is necessary to wire the GPS to only output data to the PC or install a STDP (Single Throw, Double Pole) switch. This will allow you to alternate the input to the GPS between the PC and DGPS data outputs. This will allow you to still upload data to the GPS from the PC, but will disable the DGPS during data transfer. Once switched back to data input from the DGPS, the GPS will resume receiving DGPS corrections and only output data to the PC. See the following wiring diagram for a sample of how to accomplish this.

PC/DGPS/GPS Wiring Diagaram

When transferring data from the PC to the GPS (GPS input switched to PC), the DGPS will be disabled.
To resume normal DGPS operation, swicth the GPS input back to DGPS.
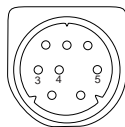
For Macintosh users

Garmin does not support Macintosh at this time and does not have Macintosh software or connectors available. Information for wiring a Garmin GPS to a DIN-8 connector is provided as a courtesy to Macintosh users. It is possible to run PC based software on Macintosh by using a PC emulator program. Macintosh systems normally utilize a female 8 pin DIN-8 port on the back of the computer.

For wiring a DIN8 to a power/data cable, refer to the above instructions, with the following exceptions:

1. Solder the power/data cable Data Out to the Receive Data (RxD) pin 5 of the DIN8
2. Solder the power/data cable Data In to the Transmit Data (TxD) pin 3 of the DIN8
3. Solder the power/data cable Ground to the Signal Ground (SG) pin 4 of the DIN8.

DIN8 (Male) - Cable View