

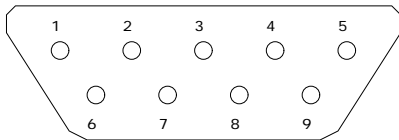
Serial Connector Pin-Outs

There have been a number of requests for the pin-outs of various serial port connectors for digital cameras. We have worked with these connectors for a while, modifying and building custom cables, and would like to share them with the serious experimenter.

Building compact, neat, professional looking cables is not nearly as simple as it looks, and take a lot more time / tools / effort than is generally appreciated. When made in large volumes (a-la digital camera manufacturers), then the cost per unit can be quite low, and they are sold at a significant markup. For Harbortronics, building one custom cable at a time by hand is a very different story, and we would be very happy to never make another serial cable! We will continue to offer this service, however, for those who have no other resource ☺

These connector pin-outs are not official, have not been supplied by any camera manufacturer, and were determined solely through the efforts of Harbortronics. Use them at your own risk!

DigiSnap 2000



The DB-9 Male connector is an industry standard that has been used for serial data communication for a very long time, and is still used on the majority of computer systems. The DigiSnap 2000 uses this connector for the simple reason that most digital cameras have serial cables that use the mating DB9-Female connector. This allows the DigiSnap to plug straight onto the camera serial cable, and control the camera as if it the DigiSnap were a computer (which it is, actually).

Pin Number	Signal	Camera Connection	Terminal Connection	Other
1	DCD		✓	
2	Data From Camera	✓	✓	
3	Data To Camera	✓	✓	
4	DTR		✓	
5	Ground	✓	✓	
6	not used			
7	Logic Out			On-board jumper required
8	not used			
9	Logic In			On-board jumper required

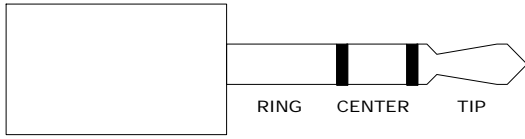
Only 3 wires are required to connect to a digital camera. There may possibly be some cameras that we have not yet come across that require other signals.

A regular null-modem cable will allow connection of the DigiSnap to another DB-9 Male computer connector, when using a terminal to configure the DigiSnap.

There are two Logic level signals that can be brought out to the DB-9 connector pins. The Logic In is an extra switch input, which can be used to trigger the DigiSnap from an external switch, or sensor circuit. A 5V logic low signal, or a short to ground (internal 100K pull-up to 5V) will signal the DigiSnap to take action (programmable action, see the DigiSnap 2000 manual). Note, as with the on-board switches, the first switch press must be long enough to wake the DigiSnap up, and subsequent to that, all activations will trigger an action.

The Logic Output signal is designed to control external devices. This is not currently supported, but will be an optional feature in future firmware releases.

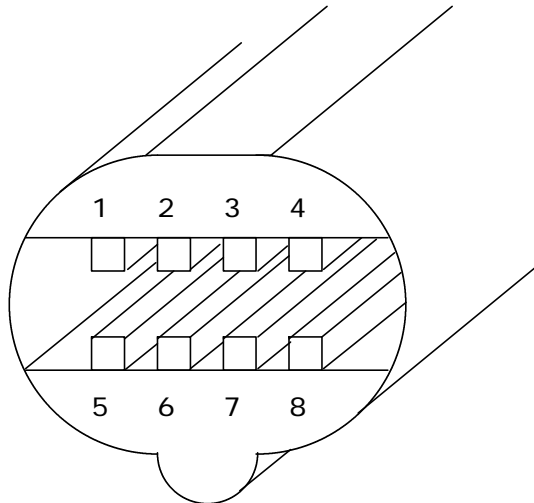
2.5 MM Stereo Phone Plug



This connector is used with many digital camera serial ports. It's a very nice system, using a low cost, widely available, reliable connector. We think it's a real shame the manufacturers are moving to using higher density, higher cost, less reliable connectors.

Connector Segment	Nikon Coolpix (except 880, 990, 995) Olympus 2020, 3030, many others...
Tip	Data From Camera
Center	Ground
Ring	Data To Camera

Nikon Coolpix 880, 990, 995



This connector appears to be custom to Nikon cameras (grumble, grumble), and in our humble opinion is poorly suited to the rigors of daily wear and tear. The connector services both the serial and USB signals.

Pin #	(Cable end connector)
1	Case Ground
2	USB D+
3	USB D-
4	Case Ground
5	USB +5V
6	Serial Ground Sense
7	Data From Camera
8	Data To Camera

Most of the functions above are clear enough... the serial ground sense is apparently used by the camera to determine if there is an active serial device connected to the camera. The DigiSnap 1000 made use of this signal to switch the LCD on & off, in the days before Harbortronics had access to the Nikon serial port spec.