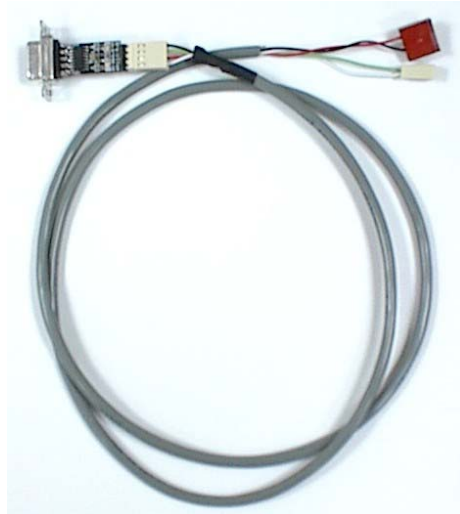


How To Build A Data Downloader Cable For An OOPic™ Controller



By: Abraham L. Howell

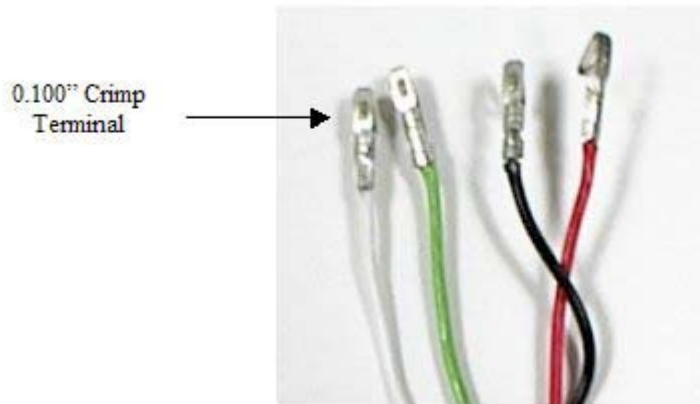
Before we get started there are several components that we will need to construct this data downloader cable and they are listed below in a small spreadsheet.

Data Downloader Cable Parts List					
Qty.	Part#	Description	Cost	Price	Where to get?
1	WM2000-ND	2-Pos 0.100" Housing	0.23	0.23	www.digikey.com
1	WM2002-ND	4-Pos 0.100" Housing	0.35	0.35	www.digikey.com
1	WM2003-ND	5-Pos 0.100" Housing	0.42	0.42	www.digikey.com
1	WM4202-ND	4-Pos0.100" Header	0.47	0.47	www.digikey.com
1	WM2200-ND	0.100" crimp terminals (pack of 10)	0.67	0.67	www.digikey.com
4	22-0722	24 gauge 4-conductor stranded cable	0.14	0.56	www.unicornelex.com
1	S13-SERIAL-INT-CONN	BrainStem™ Connector	10	10	www.acroname.com
			Total	12.7	

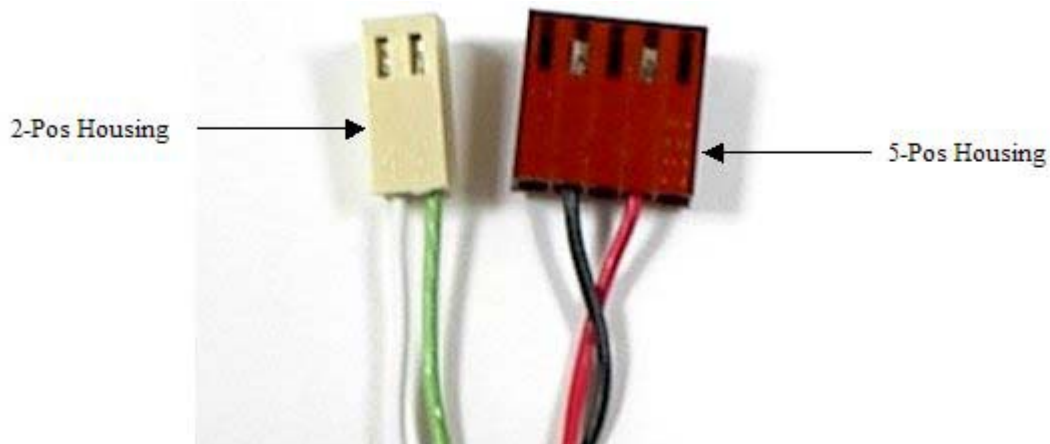
The above parts list consists of the basic needed components for this cable, but there will be several tools that are required and it will be assumed that you have access to them. You will need a good pair of wire cutters and wire strippers. If you do not have a crimp

tool that can crimp the 0.100" crimp terminals then you can either use a pair of pliers and then solder them or you can opt to purchase the correct crimp tool from DigiKey, which has the following part#: WM9999-ND.

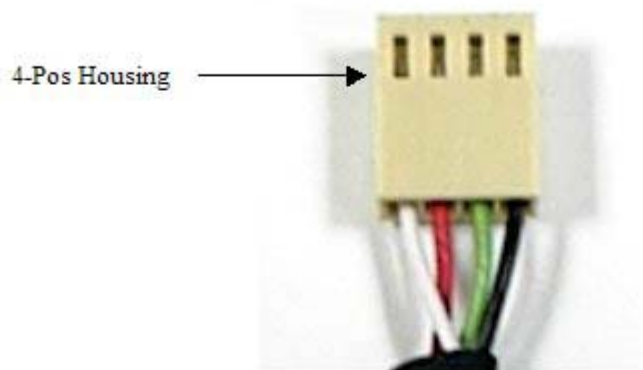
To get started you will need to cut back the insulator on both ends of the 24-Gauge 4-conductor cable. Cut it back so that approximately 2" of the 4-conductor wire is exposed. Once you have cut back the insulator go ahead and strip each conductor, do this for both ends of the cable. Strip off about an 1/8" of insulator on each conductor. Next, proceed to crimp a 0.100" crimp terminal to each of the striped wires as shown below.



The next step is to take the crimp terminal from one end of your cable and properly insert them into the 5-Pos and 2-Pos housings. Please refer the picture below for the correct connections.



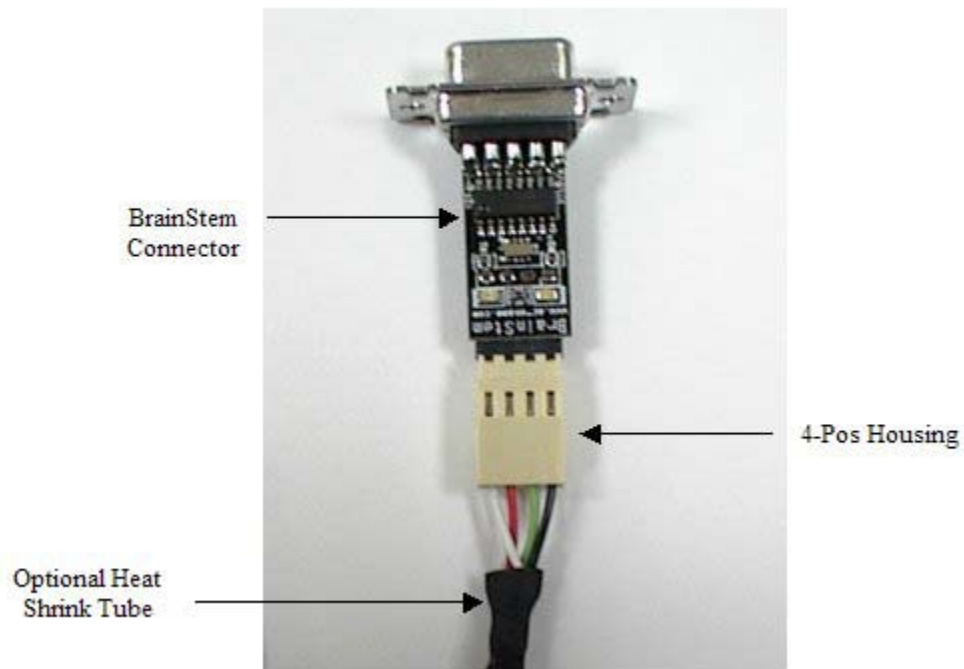
Now we need to take the crimp terminals from the other end and insert them into the 4-Pos housing as shown below.



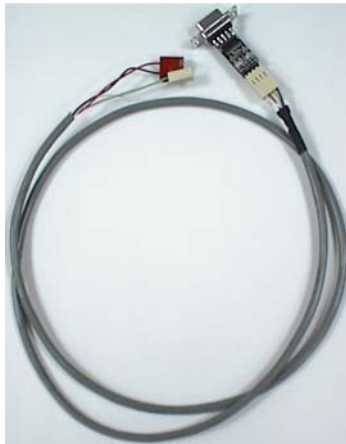
Next, we need to take the 4-Pos header and properly insert it into the BrainStem™ Connector as shown below.



Finally, Plug the 4-Pos header on the BrainStem Connector into the 4-Pos housing on your cable as shown below.



You now have your very own data downloader cable for your OOPic I. To use this cable simply connect the 5-Pos housing to one of the Network connectors on the OOPic and then connect the 2-Pos housing to pin#37(Tx) and pin#39(Rx) on the OOPic I/O connector. The green wire should connect to pin#37 and the white wire should connect to pin#39. If you are using this cable on a NewCDbot to collect data be sure that you have an appropriate EEPROM chip installed, otherwise you will not be able to collect and download data! You can also use this cable to transmit and receive commands between the OOPic and a desktop or laptop computer, but you would have to write some software for the OOPic and the desktop computer to accomplish this task.



For more information with regards to the OOPic line of Microcontrollers, please visit the OOPic website at <http://www.oopic.com>

If you have any questions about this tutorial, please send an email to abe@abotics.com