Powering Pixy

You have some choices when powering Pixy... always good to have choices! But we expect that most Pixy users will either power Pixy through the USB cable/connector or though the Arduino cable (I/O connector). These two choices are the simplest, but here are available power options:

1. Power Pixy through the USB cable/connector (regulated 5V)
2. Power Pixy through the I/O connector (regulated 5V)
3. Power Pixy through the power connector (unregulated 6V to 10V)

Note, you can have both the Arduino cable and the USB cable plugged into Pixy simultaneously without any bad things happening. In fact, this is very useful when you want to do a quick check to see what Pixy sees through PixyMon, while Pixy is connected to your Arduino, in situ, so to speak.

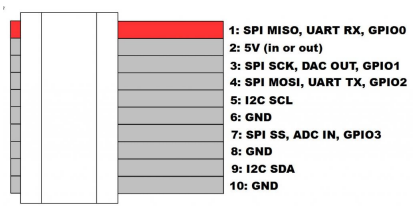
USB cable/connector

When you plug in Pixy into your computer via USB cable, Pixy is powered through the regulated 5V provided by the USB cable. It is also possible to power small rc-servos through the USB cable (like the ones in the pan/tilt mechanism) as long as the USB cable is kept somewhat short (less than 4ft is best).

I/O connector

Pin 2 of the I/O connector can accept 5V for powering Pixy. This is convenient when you want to power Pixy through the Arduino cable (ie, by hooking up the Arduino cable, your Arduino is powering Pixy, assuming your Arduino is suitably powered.) Or you can make your own I/O cable for Pixy communication/power, **but be careful! Pin 2 and the ground pins (pins 6, 8 and 10) are not reverse-polarity protected. Get the power backwards and Pixy is a goner. For good!**

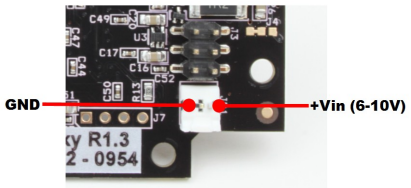
Note also, ribbon cables have poor current-carrying ability. So it's unlikely you can power Pixy through the I/O connector via ribbon cable **and** have enough power left over for controlling RC servos. The voltage will drop too much across the ribbon cable. Nothing bad will happen, if you try this but the servo will likely malfunction.



Power connector

Although we totally expect that 90% of Pixy users to use the first two choices (above), we've included a third choice -- an unregulated power input. Because we love it when we feel taken care of, and we've taken care of you, unregulated Pixy power person.

OK, here are the pinouts and polarity of the power connector:



The power connector is reverse-polarity protected, so nothing bad will happen if you get things backwards. The mating connector is a polarized connector from Molex that comes in two parts:

1. **The housing**, Molex PN 22-01-3027, available from Digikey and Mouser
2. **The crimp pins**, Molex PN 08-50-0113, you'll need at least 2 of them, also available from Digikey and Mouser