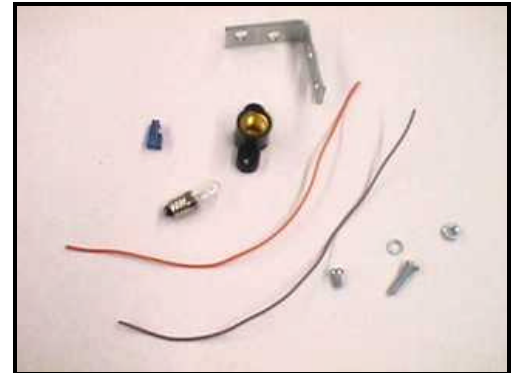


This application note explains how to connect a headlight to the ARobot. A headlight is a simple expansion that would make a good first project. It can be used as a general purpose accessory or just to act like a beacon for the user to find the robot when lost. This application may require soldering, but will generally be easy to construct.

Parts List

Part	Part #	Price
12 volt light bulb	RS #272-1134	\$1.19
light bulb holder	RS #272-356A	\$1.29
L bracket	Hardware store	\$1.00
2 pin .1 inch (2.5mm) connector	RSU 11929726	\$.49
2 wires (>3 inches in length)		
Mounting nuts and screws	Hardware store	\$1.00



Radio Shack carries the light bulb and the light bulb holder for around a dollar each. Make sure that the bulb and holder you buy fit together. The L bracket, screws and nuts were purchased from a hardware store. Radio Shack does carry wire, but any small gauge wire (~24 AWG) can be used. Radio Shack does carry the connector for \$.50, but it might have to be ordered. You might be able to find a 2 pin connector with wires attached to it. These parts can also be found at Mouser Electronics <http://www.mouser.com> or Digi-Key <http://www.digi-key.com>.

Cable

Attach one wire to one of the leads on the lamp holder. Some soldering may need to be done here depending of the type of holder you have. Attach the other end of the wire to one of the pins on the 2 pin connector. It does not matter which one since a simple light bulb does not have polarity. Then attach the other wire to the other lead on the lamp holder. The other end goes to the unconnected pin on the 2 pin connector. **MAKE SURE THAT THE TWO WIRES DO NOT SHORT TOGETHER.** If the wires are shorted when power comes on, the ARobot controller board could be damaged. Wrap electrical tape around all exposed wires to ensure that the wires will not short together.



See our web site at:

<http://www.robotics.com/arobot>

for additional application information.



www.robotics.com

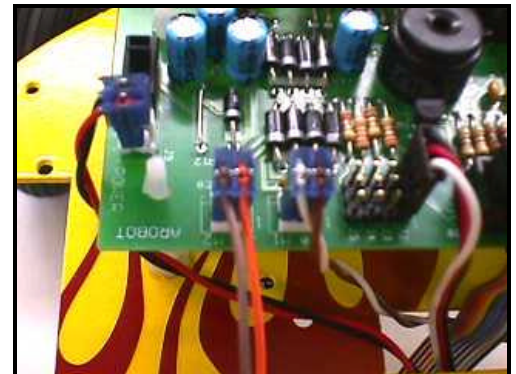
Mounting

Attach the lamp holder to the L bracket. The example shown uses a 6-32 nut and a 6-32 x 5/8" screw. Then attach the L bracket to the body of ARobot using a 6-32 x 1/4" or similar screw through an unused hole on the body. Make sure that the wires are not pinched which could cause them to be cut or shorted together.



Connection

Attach the 2 pin connector to the motor 2 connector on the ARobot controller board. This is located next to motor 1 connector (See the user guide for details). This is a general purpose 12 volt output used for high current applications such as another DC motor, headlight, relay, etc.



Software

'light.bs2 www.robotics.com

'This routine demonstrates how to turn on and off the headlight. The headlight will turn on and off every second.

charn	var	byte	'input variable.
net	con	8	'coprocessor network pin.
baud	con	396	'network baud rate.
main			
serout net,baud,["!1M21"]			'turn the headlight on.
serin net,baud,[charn]			'get ack from coprocessor.
pause 1000			'wait one second.
serout net,baud,["!1M20"]			'turn the headlight off.
serin net,baud,[charn]			'get ack from coprocessor.
pause 1000			'wait one second.
goto main			'loop forever.

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