Microcontroller Power Controller Kit

User Documentation

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Microcontroller Power Controller Kit Introduction:

The Microcontroller Power Controller Kit is a perfect platform for experimenters and/or hobbyists to use as a basis for remote/automatic power control of a 120V device using an Arduino (or similar) microcontroller:

- Complete foundation for remote or automated power control of 120V devices
- All-in-one enclosure contains 120V power relay circuit, microcontroller power supply, and mounting area for your choice of microntroller platform
- Microcontroller power supply is 5V, 9V, 12V selectable (2A max)
- 120V/20A switching/relay capacity using a single microcontroller digital I/O pin (3VDC @ 3-5ma)
- Single enclosure, single power cord, single power outlet
- Sufficient space in enclosure to mount even the largest microcontroller platforms (Arduino, Mega, Stalker, IBoard, GBoard, RBoard, etc) (100mm wide x 120 mm long)
- Sufficient space in enclosure to stack one or more shields
- Detachable baseplate and stand-offs included for maximum microcontroller mounting flexibility
- 1:1 printable mounting templates included for several popular microcontroller platforms
- Clear enclosure cover for visibility of dignostic LED's
- Enclosure can be wall-mounted using a built-in, extendable, hanging tab
- Both a standard barrel connector, and discrete pin cable, provided for the microcontroller power supply
- Control a 120V power circuit REMOTELY with your choice of microcontroller and shields (WiFi, Ethernet, GSM, Bluetooth, etc)
- Control a 120V power circuit AUTOMATICALLY with your choice of microcontroller and sensors (Time, Temperature, Light, Water Level, Proximity, etc)

…Drop in your Microcontroller (the desired sensor(s)), connect the relay trigger circuit to the desired I/O pin, connect the power supply connector, select the desired power supply voltage and go!
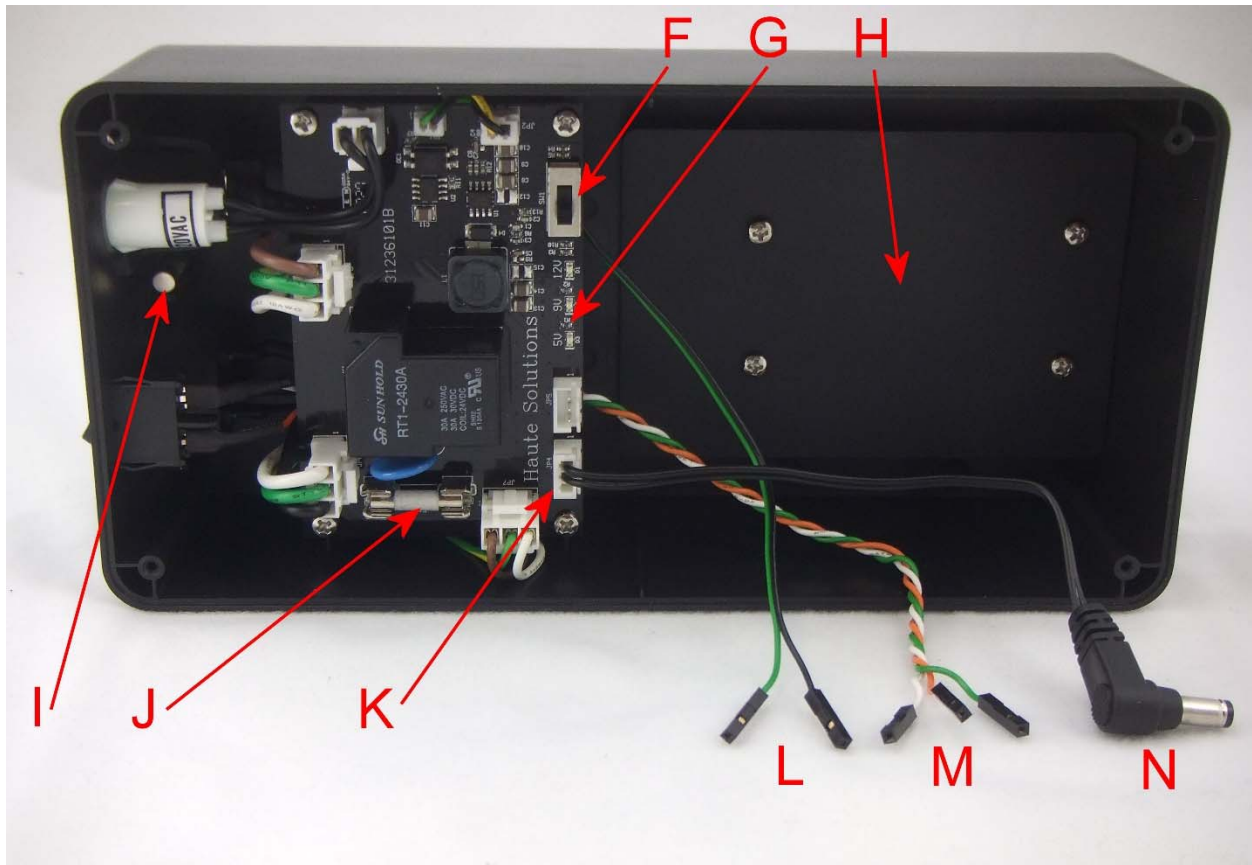
Hardware:
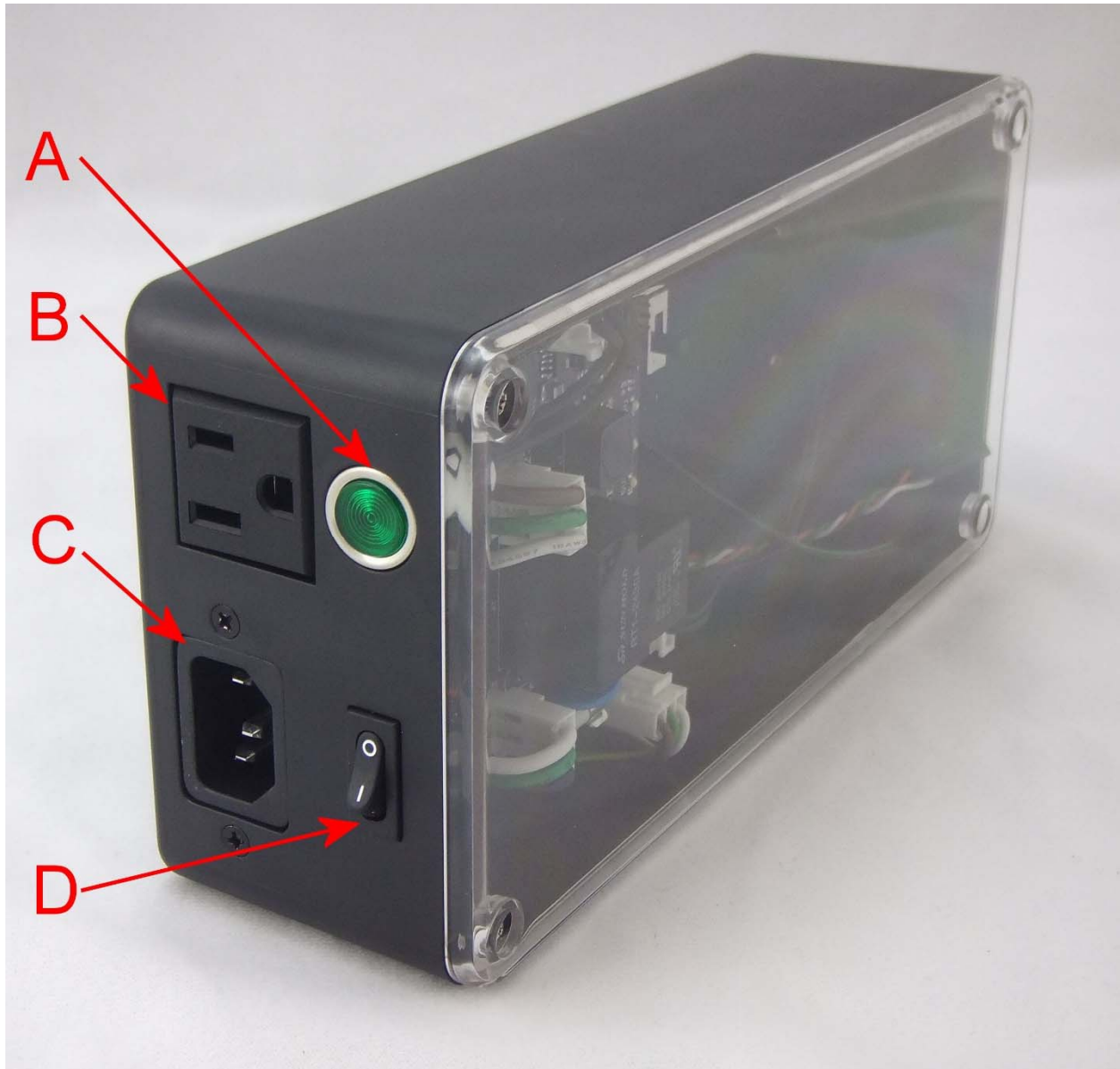
A. Relay Power Indicator
B. 120V Electrical Outlet (to Device)
C. 120V Electrical Inlet (to Power Source) (Cable Included)
D. Momentary Pushbutton (User Defined – Manual On/Off?)

E.   Wall Hanging Tab (Deployed)

F.   5V/9V/12V Microcontroller Power Selector
G.   5V/9V/12V Microcontroller Power Indicator
H.   Removable Baseplate for Microcontroller mounting (Drill for Standoffs as needed)
I.   Spare Fuse (120V Relay Circuit)
J.   In-Service Fuse
K.   Microcontroller Power Headers (JP4 & JP5) (5V/9V/12V as selected)
L.   Relay Trigger Circuit:
   • Black: To Gnd
   • Green: To Digital IO Control Pin (Pos)
M.   Manual Momentary Switch Circuit (w/ pulldown):
   • White: SIGNAL (from Switch to Digital IO Pin / INPUT)
   • Red: VCC (3v/5v to switch)
   • Green: GND (10K Pull Down Circuit from Switch)
N.   Power to Microcontroller (Barrel Connector / Tip Pos)
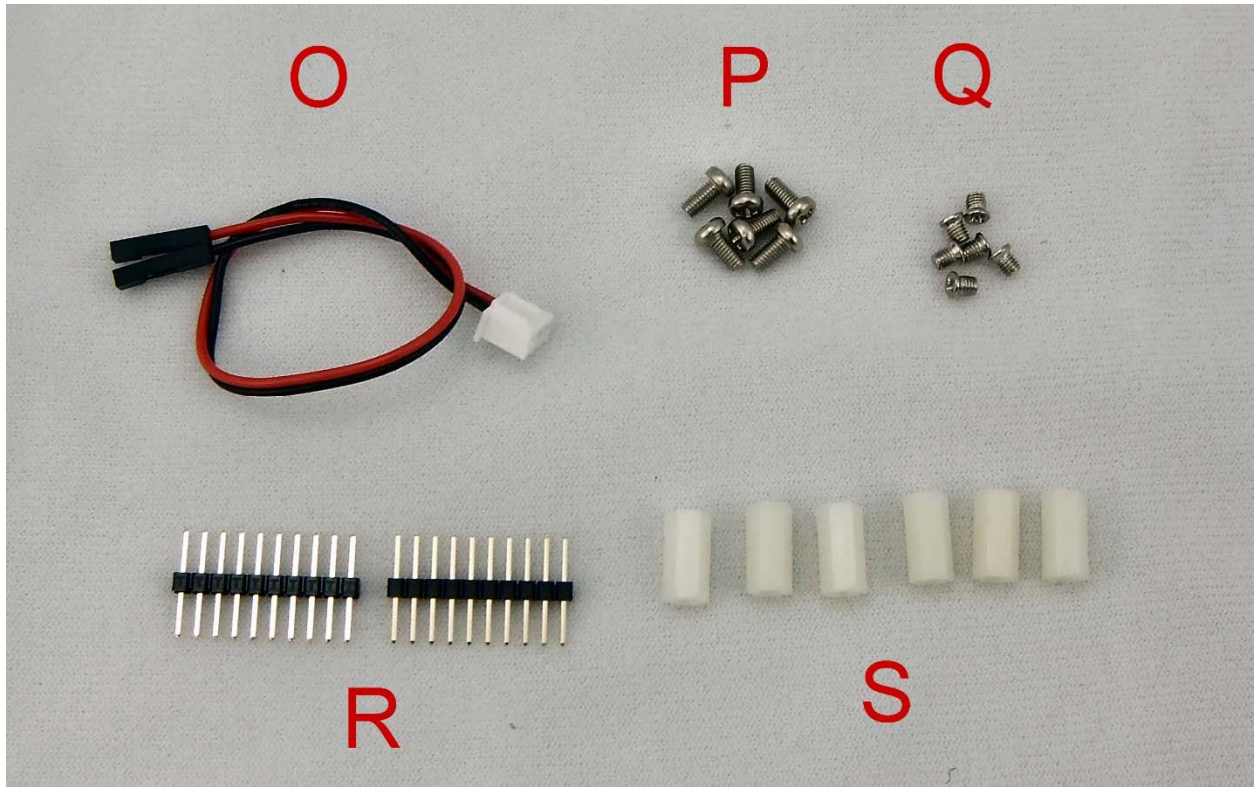
O. Optional Power Supply Circuit (for microcontrollers without barrel connector power socket)
P. Screws to mount standoffs to baseplate
Q. Screws to mount microcontroller board to standoffs
R. Break Away Male Header pins (Can be used to convert female socket connectors to male pins)
S. Standoffs (threaded)