

**Automatic Auto Router on/off Control with Dust Collection –
REVOLUTION AND KL744.**

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ADDING AUTOMATIC ON-OFF ROUTER CONTROL TO THE REVOLUTION

This is an addendum to the previous work of Greg Grote and Kjell Evensen. Many thanks to them for providing the foundation for this in their article on the EV3/4. I suggest you read their article first. This addendum shows the connections for the REVOLUTION from BOBsCNC.

I purchased the following on Amazon:

1. IoT Relay - Enclosed High-power Power Relay for Arduino, Raspberry Pi, PIC or Wifi, Relay Shield (about \$40)
 - a. Main power switch
 - b. Two normally open (NO) outlets (which the IoT calls "normally OFF"),
 - c. One normally closed (NC) outlet (which the IoT calls "normally ON"),
 - d. One

"always ON" outlet (i.e., "always" means whenever the main power switch is on), and

e. A control input (green plug on the side of the unit) that accepts a very wide range of input signals, 3-48VDC or 12- 120VAC

2. EDGELEC 120pcs Breadboard Jumper Wires 10cm 15cm 20cm 30cm 40cm 50cm 100cm Wire Length Optional Dupont Cable Assorted Kit Male to Female Male to Male Female to Female Multicolored Ribbon Cables (\$6.89) The wires were not long enough to reach from the controller board to the IOT Relay but I attached them together and taped the joints with electrical tape.
3. Automatic Vacuum Switch for Power Tools, Etoolcity Unique Current Sensing Technology to Delay Vacuum On to Prevent Circuit Overload, Eliminating Circuit Breaker Tripping. (\$34.99)
4. I purchased a dust boot from a seller on ETSY for \$62.50. Dustimator © for Bob's CNC - Makita RT0701C- (with magnetic removeable 2" bristles base). It works very well for dust collection. The only down side is that you need to remove the entire boot to change the bit on the router. I'm not sure there is an easy fix for this as the exposed neck of the router is limited.

The removable (magnetic) brush is a nice feature.

I've tried several dust collection methods for the Revolution. This works pretty well.

I ran a hose to a RIGID shop vac that draws less than 12 amps. This is key as the combined AMP rating of the router (6.9 AMPS) and the shop vac should not exceed 20 AMPS.

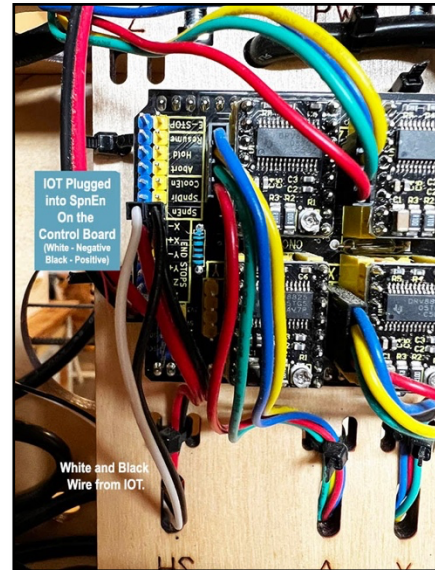
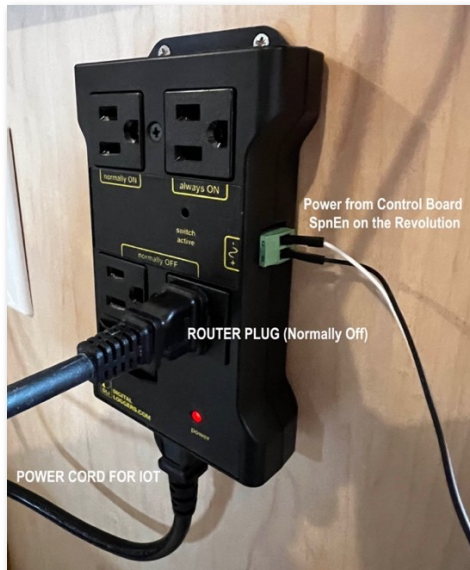
NOTE: If the outlet in your shop is a 15 AMP circuit, you will need a shop vac that uses less than 8 AMPS. Best to use a 20 AMP circuit. You do not want to blow the breaker while you are carving.



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STEPS

1. Connect the IOT Switch to the control board through the SpnEn connector on the Revolution UNO Controller. When the software starts the Revolution, the signal is sent from the Revolution UNO Controller to the IOT Relay. I used jumper wires I purchased on Amazon. These were too short so I spliced them together.



Internet Of Things (IOT) Relay Revolution UNO Controller

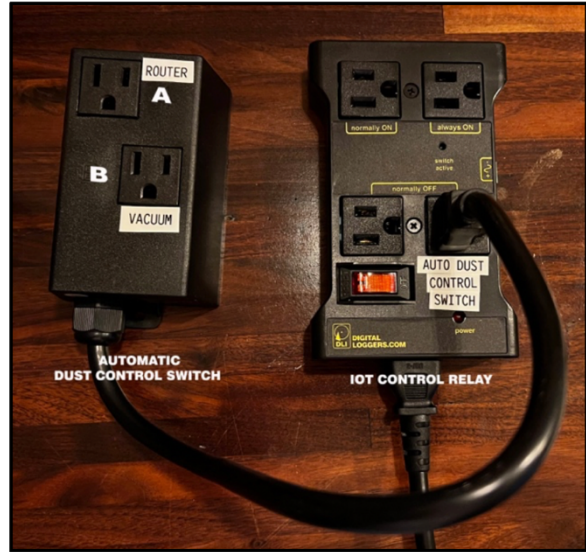
1. The Automatic Duct Control Switch is plugged into one of the two “NORMALLY OFF” outlets on the IOT Control Relay.
 - a. BOB’s post processor software includes and sends the "M3" (ROUTER ON) command, which tells the controller to energize the the pins to which we connected the IOT Control Relay.
 - b. It also includes the M5 Code which is the GCODE to turn the router off at the end of the job. I use Vectric Aspire and Bobs post processor which is on their website for my REVOLUTION models.
 - c. When the IoT senses that signal, it closes (i.e., turns on) the Normally Off outlets and opens (i.e., turn off) the Normally Closed outlet.

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2. The router (with its switch already turned on) is plugged into one of the “A” plug on the Automatic Dust Control Switch which is plugged into one of the Normally Open outlets on the IOT Control Relay.

In the absence of the control signal the IoT Relay returns to its initial state, and our router stops turning.

3. Plug the shop Vac into the “B” plug on the Automatic Dust Control Switch, and turn on the shop vac. It will not start until the Router is energized in plug “A”.
4. When the Router plugged into “A” is energized, the vacuum port “B” will be energized after a couple of seconds.



ADDING AUTOMATIC ON-OFF ROUTER CONTROL TO THE KL744

Follow the same procedure for the KL744. The difference is where to connect the IoT connection on the automatic switch. Also, the control board is inside the controller box so you need to remove the top cover.

You will want to hook up the IoT to D11 and GND on the screw shield. See the picture below.

