The PC interface

The device that interfaces these alarm boards with my server, and my phone, is the Zooz Zen17 Universal Relay.

I chose this product specifically to interface with my Z-wave network, a low power short range 900MHz wireless network for home automation. This device is also very cheap (considering the amount of I/O and the general cost of Z-Wave devices) and can run on 12-24V DC as well as USB power.

The Zen17 has two each inputs and outputs: two line-voltage rated relays, and two sets of "dry contact" inputs (two sets of "common 0V" and "sense" pins, and when they are shorted together, the input is detected as "on".)

A useful feature of this device is that the two S1/S2 inputs can be specifically designated as generic smoke and CO alarm senors. This is set in the Z-wave configuration for the device, which I won't go into here.

By default the inputs and outputs are tied together: input 1 is triggered, and relay 1 is activated. The state of the inputs is monitored on the Z-wave network, and relays can also be triggered manually via the network (and in my case, HomeAssistant). I also changed the configuration to separate inputs and outputs, since I am not currently using the relays to do anything, having them activate with the alarms just adds uneeded wear and tear.

Here is a closeup of the relay box installed next to the UPS and alarm relay box:



With the two above configuration changes, I made two simple HomeAssistant "automations" that simply send my phone a notification when one of the alarms goes off,.

From a blank automation template:

```
Trigger:
  - type: Device trigger
  - device [choose the dual relay box]
  - Trigger: "Smoke Alarm Becomes Hot"/"CO Alarm started detecting gas" [choose 1]
  - Duration: 1 sec

Action:
  - type: device
  - Device: [choose your phone]
  - Action: Send Notification
  - Message: "SMOKE/CO ALARM HAS ACTIVATED!!"
  - Title: FIRE ALARM
```

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