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Mains Monitor

A unique anti-theft system for mains-powered electronics

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The problem

- Theft of expensive electronics from premises accessible to the public
- Colleges, schools, hospitals, hotels, shops, museums, libraries, offices....
- Conventional intruder alarms are useless during the working day

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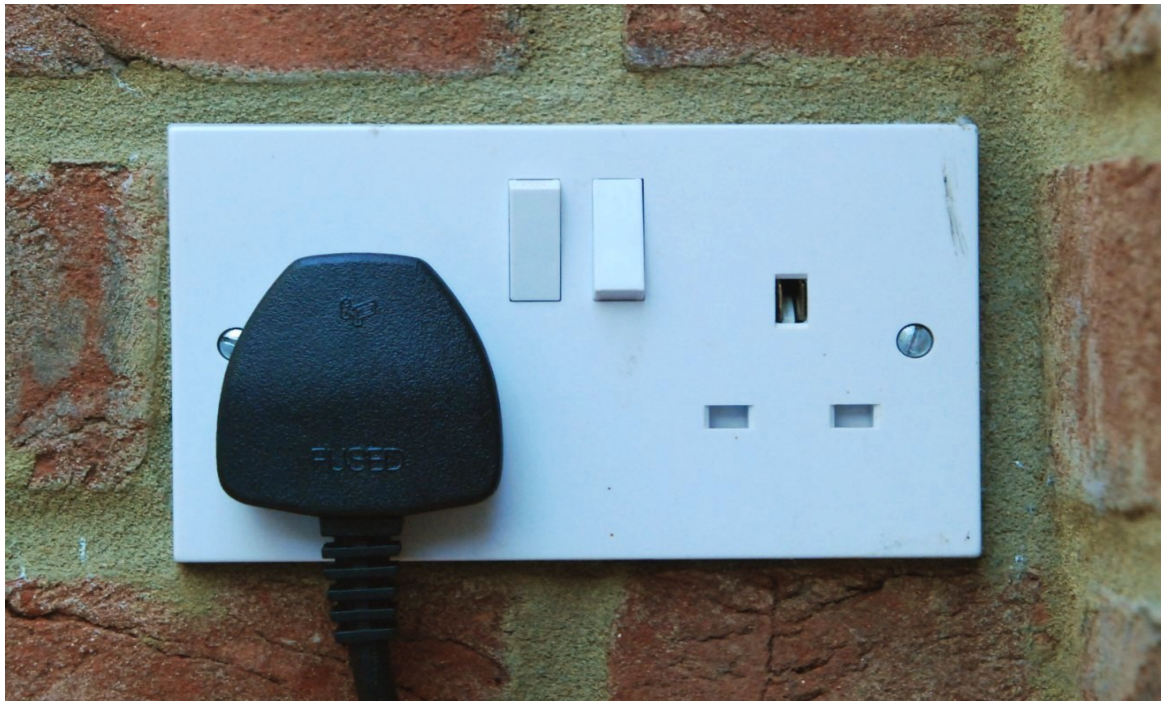
A straightforward idea

Nobody can steal mains-powered equipment without first disconnecting it from the mains!



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A straightforward idea

- Mains Monitor constantly checks whether mains-powered devices are still connected
- Signals a central alarm station if any protected device is unplugged
- Patented in UK and USA, further UK and international patents pending

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A straightforward idea

- All previous attempts to protect equipment based on connection to the mains have required a sensor to be fitted inside the device
- Mains Monitor fits between the device and the mains supply
- Detects current flowing to the device
  - Standby current may be very low...
  - ...but traditional off switches are now pretty rare!

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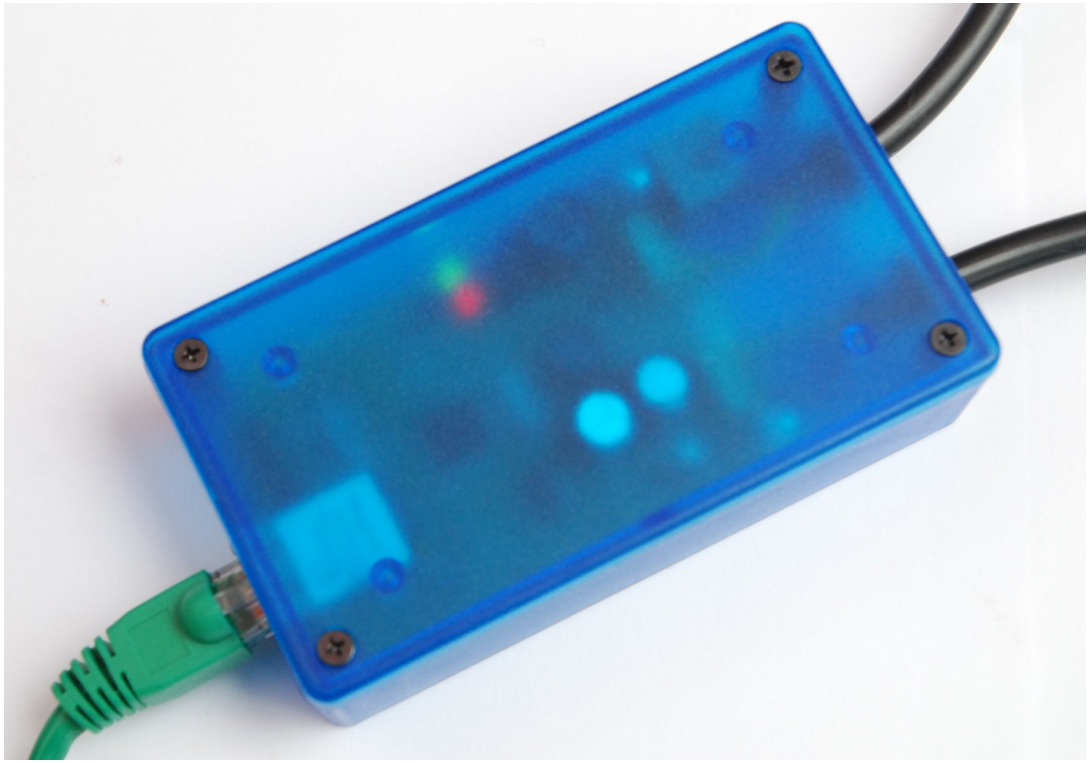
Mains Monitor sensor



- Production version can be built into a plug-in unit, similar in appearance to a timeswitch

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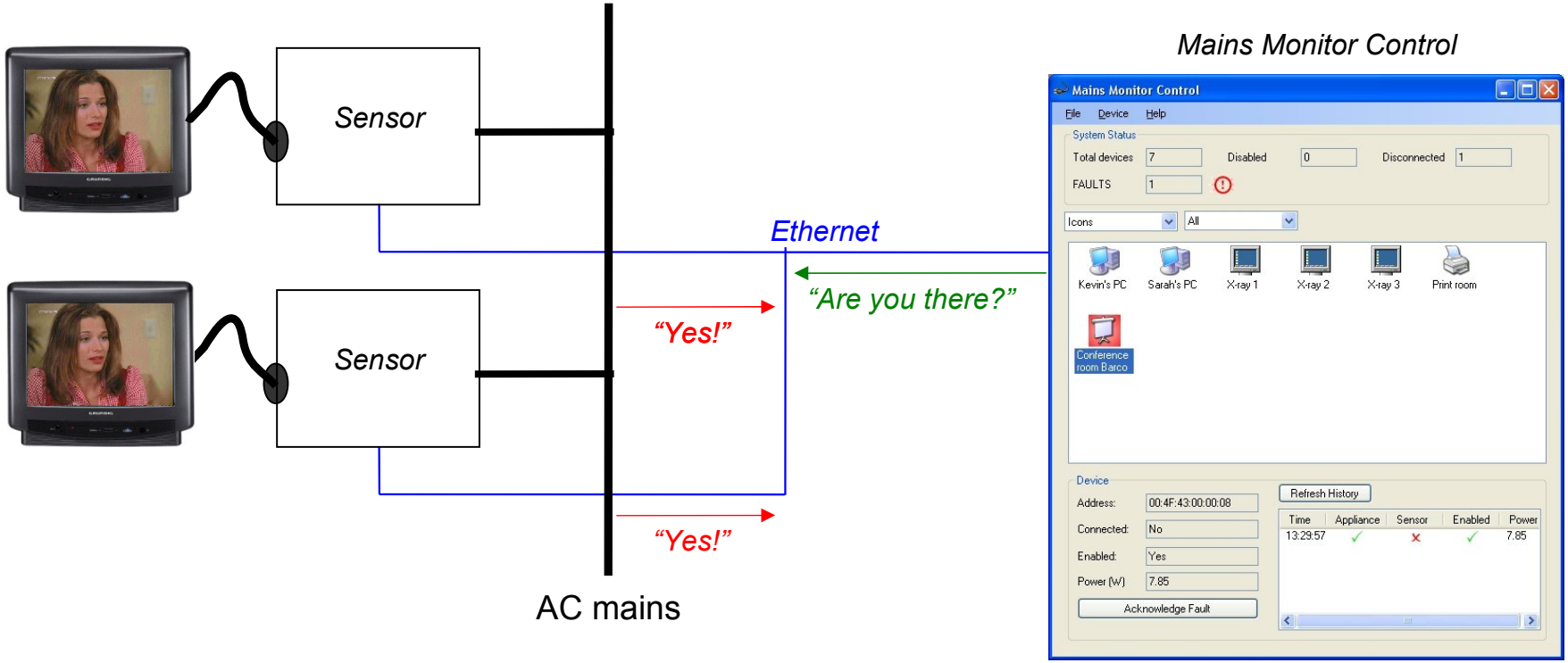
Normal operation



- Each sensor polled every 2 seconds by default

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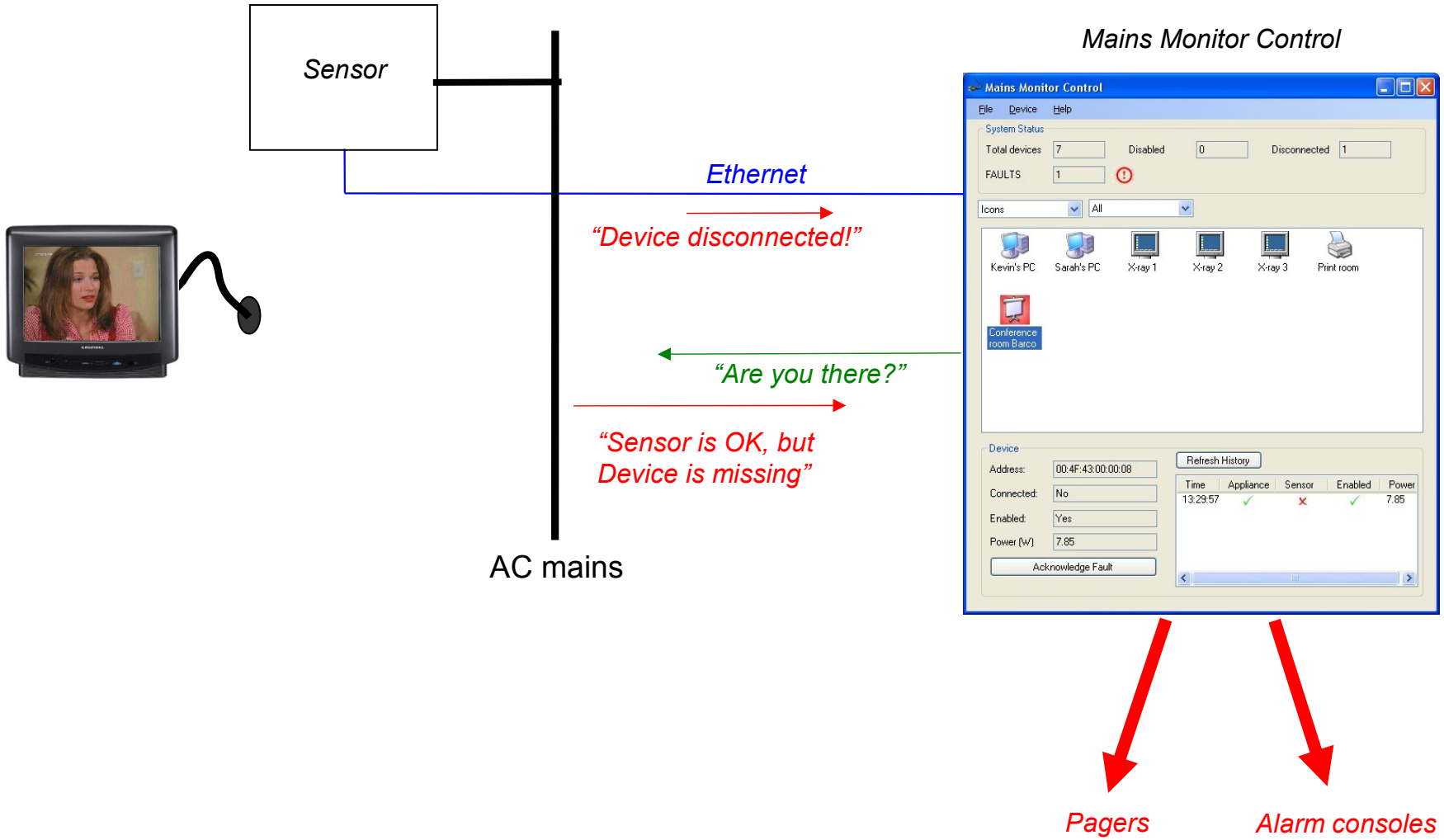
Device disconnected



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Sensor disconnected

Sensor

Ethernet

"Are you there?"

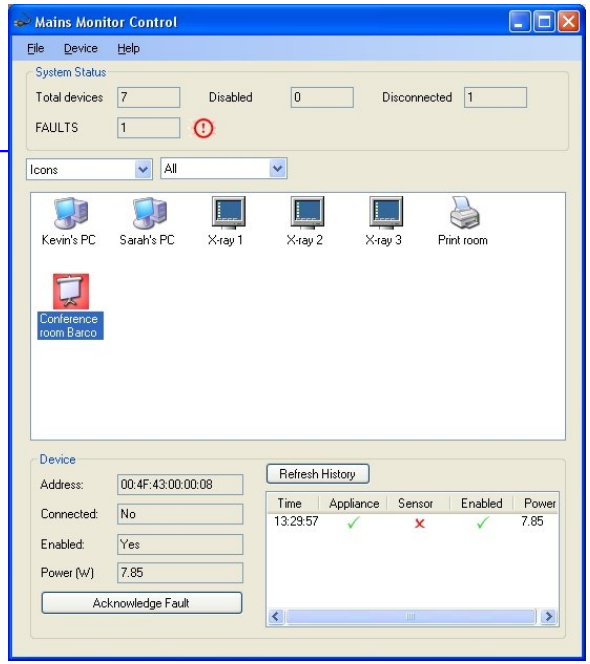
"Are you there?"

"Are you there?"

"Are you there?"

AC mains

Mains Monitor Control



Pagers

Alarm consoles

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Network disconnected

Sensor

Ethernet

"Are you there?"

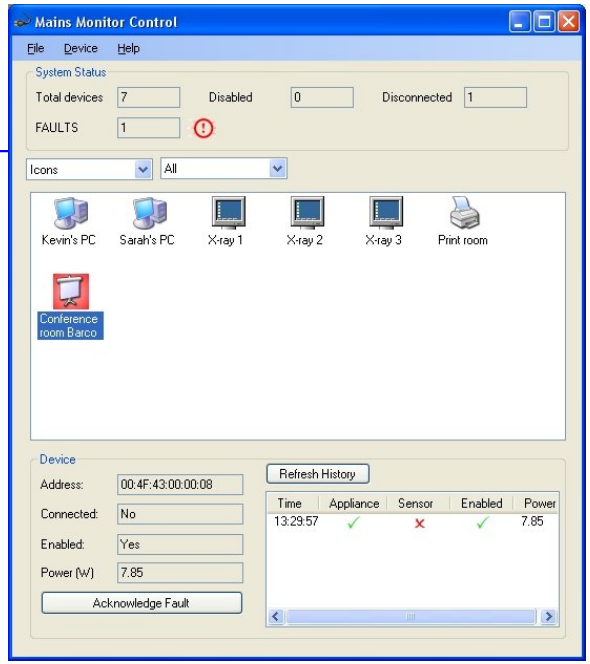
"Are you there?"

"Are you there?"

"Are you there?"

AC mains

Mains Monitor Control



Pagers

Alarm consoles

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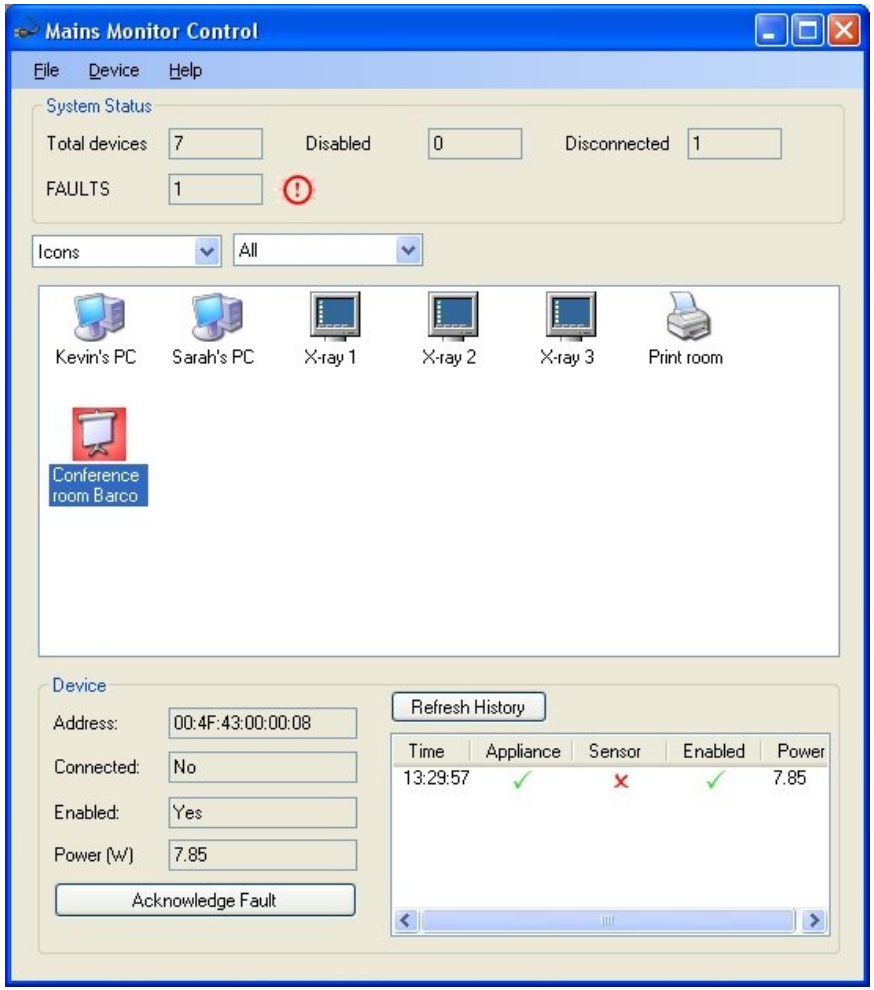
Mains Monitor Control

- Windows application
  - Runs on any standard PC
- Manages up to 500 sensors
- Faults displayed instantly
  - Recorded in a log
  - Can activate pager, send email etc
- Can run in multiple locations for redundancy



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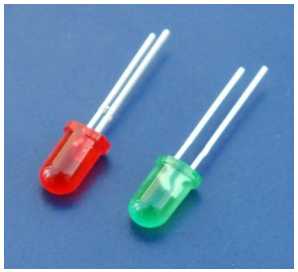
Mains Monitor sensitivity

- Sensor detects currents from 10A to < 400uA
  - < 0.1W on 240v mains supply
  - Lower than lowest standby current
  - Approximately equivalent to two LEDs



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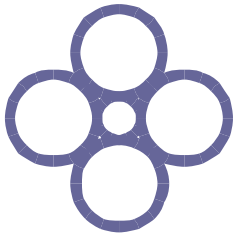
Disarming Mains Monitor

- Optional keypad to allow user to disarm sensor



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Disarming Mains Monitor

- Enter correct four-digit code
  - You have 15 seconds to unplug the device (green LED flashes)
  - Sensor then disarmed
  - Sensor automatically rearms when device reconnected
- Enter incorrect code
  - Must wait 15 seconds before trying again (red LED flashes)
  - Waiting time doubles every time you get it wrong
- Mains Monitor Control is informed whenever...
  - Code entered (correct or incorrect)
  - Device removed
  - Device reconnected

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Other features

- Secure communication between console and sensors
  - Prevents tampering
- Optional sounder
  - Alarm sounds when device removed
  - Periodic “chirp” if sensor hasn't heard from controller within last few seconds

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Mains Monitor applications

- A unique solution for any publicly accessible environment where there is expensive electronics

- Hospitals
- Schools and colleges
- Offices
- Hotels
- Retail
- Museums
- Libraries
- ....

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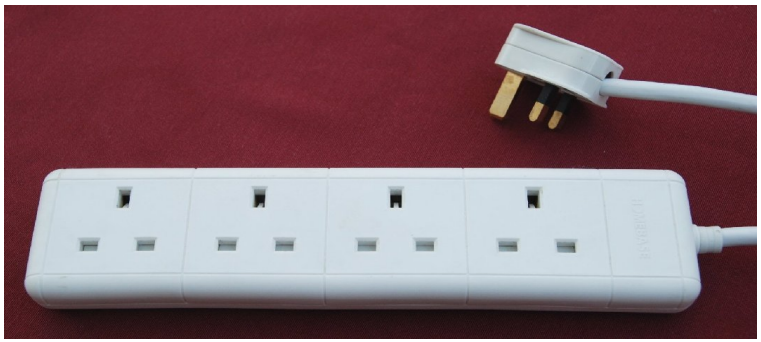
Under development...

- Multi-outlet sensor
  - Several outlets, only one Ethernet port
  - Reduced cost per outlet, and lower network costs



- Mains-linked communications
  - For buildings without Ethernet networks
- Web interface for arming/disarming sensors
  - Ideal for laptop users
  - No need for keypad on sensor

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Questions?