

## Wellspring Metering & Control Technology

Wellspring designs and manufactures a family of submetering and control products which employ an open protocol 2-way radio that complies with IEEE 802.15.4 and ZigBee Pro radio standards.



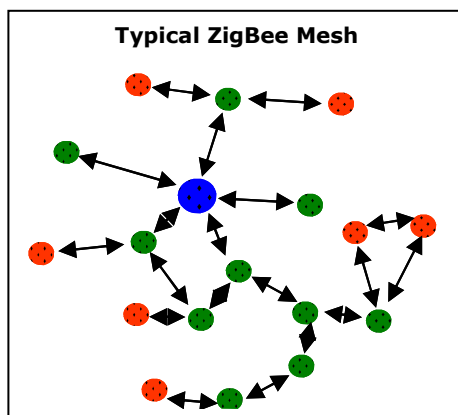
Wellspring's core product has 2 serial ports, 4 binary inputs, 4 analog inputs, and 4 binary outputs. When packaged and loaded with application specific firmware, a host of products emerge, all of which share the same open radio protocol. If you have an application that seems to be a good fit, we are always open to consider new ideas that will expand our line.

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|------------------------------------|---|
| 1. Aqura water / wet energy meters | - Water use (gallons) Energy (BTUs), Events and Time    |
| 2. Pulse Counters (4)              | - Maintain 4 separate pulse count registers             |
| 3. Time & Temperature              | - Track up to 4 zone valves and 4 temperatures          |
| 4. Baseboard (no valve)            | - Tracks time and temp with mechanical t-stat valves    |
| 5. Fan Coil                        | - Time and temp for both heat and cool                  |
| 6. Temp & Humidity                 | - Maintains log of temp and humidity every 15 min.      |
| 7. Green Thermostat                | - "i" series Robertshaw thermostat, tracks energy use   |
| 8. Electric Multi-plex             | - Mod-bus integration with Intellimeter 8-plex          |
| 9. Electric meter under glass      | - General Electric utility meter, serial port to ZigBee |
| 10. Electric Load Control Module   | - Controls 240 v 30 amp load, records amp-hours         |
| 11. Multifunction BTU Meter        | - Hot water heater, gas, water, and wet BTU use         |
| 12. Fireplace Monitor              | - Time of pilot and main burner, room temperature       |
| 13. Marine Pedestal                | - Records 2 Aqura and 2 electric meters, line powered   |

Any of the devices above may be line powered, eliminating battery issues. Replaceable lithium batteries are available when line power is not available, with a minimum 5 year battery life.

### AUTOMATED DATA RECOVERY WITH A RADIO MESH NETWORK

All line powered devices also function as data routers, which collectively form an open protocol ZigBee mesh. This is critical, since the environment through which data must



travel by radio is always changing. The data route that worked before can fail suddenly. To test this, open the "Radar" function on your laptop, and note how quickly the available wi-fi nodes "move". Of course, the wireless routers you see are motionless, but the signal path you "see" moves in real time. All radio communication is this dynamic – only ZigBee compensates by offering up to 16 redundant paths, and 16 redundant frequencies to use. So, when one route is blocked, or one frequency is problematic, another is used. As a practical matter, mesh networking is the only reasonable approach to deliver data reliably in an ever changing environment.

*"Leaders in utility cost recovery technology"*

