



Case Details

Bondor is one of Australia's leading manufacturers of thermally efficient and lightweight building panels. Their InsulWall® and SolarSpan® insulated products have been used significantly in the construction of an energy efficient home. This home, known as the InsulLiving® project will demonstrate over an extended period of time the energy and cost benefits of thermally efficient materials in addition to validating the homes BCA 8 star energy efficient rating.

Key Requirements

- Ability to measure both internal and external environmental conditions via a range of sensors
- Large number of inputs for temperature sensors
- Large storage capacity



All Wired Up: The dataTaker DT85 is installed in a secure cabinet, monitoring the environment both within and around the InsulLiving® home.

dataTaker DT85

- 1 A cost effective data logger expandable to 300 channels, 600 isolated or 900 single-ended analog inputs
- 2 Built-in web and FTP server allows for remote access to logged data, configuration and diagnostics
- 3 Modbus slave and master functionality allows connection to Modbus sensors and devices and to SCADA systems
- 4 Smart serial sensor channels capable of interfacing to RS232, RS485, RS422 and SDI-12 sensors
- 5 Rugged design and construction provides reliable operation under extreme conditions
- 6 Includes USB memory stick support for easy data and program transfer



dataTaker Solution

Equipment

dataTaker DT85 data logger
dataTaker CEM20 channel expansion module
Wall mounted enclosure

Sensors

Latronics kWh energy meter	Vaisala WXT520 Weather Transmitter
Vaisala GMW116 CO ₂ Transmitter	RTD (Temperature) Sensors
Vaisala HMM40Y Humidity Transmitter	

Implementation Notes

Pacific Data Systems – an Australian dataTaker distributor – designed and commissioned a turn-key solution for monitoring energy usage within the Bondor InsulLiving® Home. Their solution was based around a dataTaker DT85 due to its robust design, large number of analog inputs and its compatibility with almost any sensor.

Temperature is measured using RTDs in each room and is measured externally via the weather transmitter mounted on the roof. Humidity is also measured internally and externally. By analysing the internal and external temperatures and their rate of change, Bondor can identify the efficiency of the insulating properties of their building materials. The energy meter outputs one pulse per watt-hour of electricity consumed within the home, which helps determine how energy efficient the home is throughout the year. The Carbon Dioxide (CO₂) transmitter measures the CO₂ levels within the home, which is a gauge of how well the house is sealed/ventilated. This is important to the client because rising CO₂ levels are a sign of poor ventilation.

The system transmits its logged data via the loggers Ethernet connection. The home will initially be used for display purposes, after which time it will be occupied for 12 months to verify the homes BCA 8 star energy efficiency rating.