

Isolated Serial Converter for Power Utility Communications



Industry: Power and Energy
Product: Optically Isolated Serial Converter

• The Challenge

Arizona's Salt River Project (SRP) provides electrical power for much of the Phoenix metropolitan area. Power is generated by a mix of nuclear, hydroelectric, oil, coal and natural gas plants as well as renewables. Different substations on the grid use a variety of SCADA systems from multiple vendors, and each vendor implements its own circuits and makes its own recommendations about how to wire, ground, bias and terminate RS-485 ports. Communication glitches were a continual source of erroneous data errors and trouble reports, and they threatened to mask real substation problems.

• The Solution

B&B Electronics sent an engineer to work with SRP's engineers and field technicians. Tracking down the source of the trouble involved making minor adjustments to termination and biasing and observing the results. The B&B 485DRCi RS-232 to RS422/485 converter made that easy, with its switchable biasing and termination resistors. The scopes data soon indicated that errant relay slave nodes on the multi-drop RS-485 system were inconsistent in replying to their polls. Random delays were causing bus contention.

A follow-up call to the relay manufacturer led to a software update, and the problem was solved.

• Why B&B Electronics?

- As THE experts in serial communications B&B was able to consult SRP on a hard to find field problem, offering service well beyond what was expected
- The switchable biasing and termination features allowed for in field adjustments and testing to eliminate communication errors
- The triple isolation of both communication ports and the power is ideal for power utility applications where stray currents can occur anywhere
- The wide temperature rating of 485DRCi provides for long term reliability in the temperature extremes of outdoor power utilities

• The Product

Ilinx™ Model 485DRCi – RS-232 to RS-422/485 Optically Isolated Converter

- Switchable biasing and termination resistors
- 2000V isolation on input/output and power
- Wide temperature range -40 to 75°C
- CE, CUL Class1 Div2 Approved



LINX™

Model 485DRCi



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