

## Amsterdam Gets Hooked Up to Real Time



Alliander (formerly Nuon) is one of the biggest energy suppliers in the Netherlands with 2.5 million customers in the Netherlands and Belgium. They generate electricity (20 TWh yearly, green and grey) and distribute it, as well as gas, to a major part of the Dutch domestic and industrial market. One of the divisions of Alliander is Liandon (formerly

Nuon Tecno). This engineering and project management division was contracted to provide a telemetry system for the gas network in Amsterdam.

Amsterdam has a large number of gas substations where Alliander can regulate the gas distribution network for the Dutch capital. There was, however, a requirement to not only regulate, but also monitor in real-time usage, alarms and flow measurement. With this information Alliander can deliver better services to their customers and reduce cost.

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For the remote telemetry unit, Alliander chose a new RTU, the D05 from Datawatt Telecontrol Systems that utilizes the Ethernet-based IEC 60870-5-104 communication protocol. Using fiber-optic cabling for the Ethernet communications would have been the logical choice because many of the Ethernet links would exceed the maximum 100-m (328-foot) range for UTP cable. Fiber would be too expensive and nearly impossible to install in a short time frame and in a crowded city.

The solution was simple: “Make use of the existing copper cabling that existed in Alliander’s own telecom and signaling cable network. After some successful tests with the Westermo DDW-100 and previous experiences using the Westermo modem family, Alliander made a choice to use the Westermo Ethernet Extender products, distributed in the Netherlands by MODELEC,” states Rens Dekker, senior engineer at Liandon.

The key specifications were the galvanic isolation, extended temperature and performance. Tests were done up to 17 km (10.6 miles). Alliander is using a ring of DDW-221s to form a central, redundant ring. From this central ring, 140 point-to-point communication lines are used to connect the remote locations (gas substations).

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Each point-to-point link consists of two DDW-100s to extend the Ethernet link up to a maximum of 12 km (7.5 miles). In total, Alliander has installed 6 DDW-221s and 280 DDW-100s to upgrade its gas distribution system into a modern SCADA-controlled and monitored communication system.

For more information, please e-mail [bengt.andersson@westermo.se](mailto:bengt.andersson@westermo.se) [1] or visit [www.westermo.com](http://www.westermo.com) [2].

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