Amsterdam

gas and energy distribution

Westermo

*Robust Industrial Data Communications
– Made Easy*

Amsterdam gas and energy distribution

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 (20TWh 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 were contracted to provide a telemetry system for the gas network in Amsterdam.
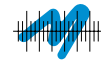
Amsterdam has a large number of gas-substations where Alliander can regulate the gas distribution network for the Dutch capital. There was however a requirement to not only regulate, but also monitor in real-time usage, alarms and flow measurement. With this information Alliander can deliver better services to their customers and reduce cost. For the re-mote telemetry unit Alliander chose a new RTU, the D05-MCU-IEC from Data watt Telecontrol Systems that utilizes the Ethernet based IEC 60870-5-104 communication protocol. Using fibre-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 ft) range for UTP cable. Fibre would however 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 which already existed in Alliander's own telecom and signalling cable network. After some success-
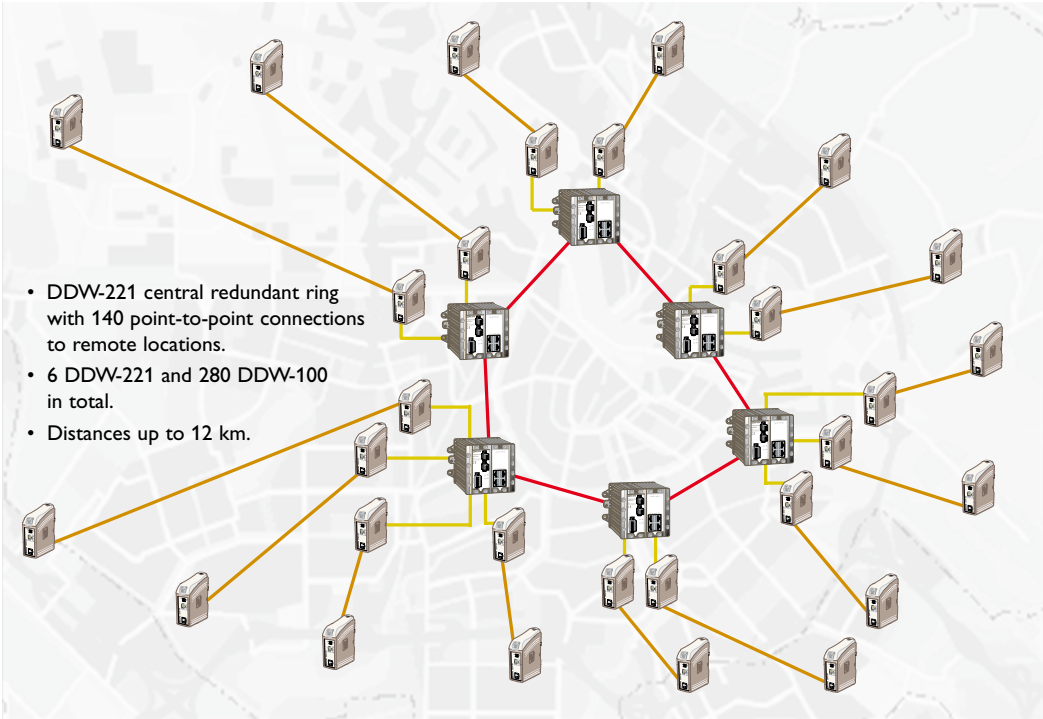
Company data:
Dutch energy company that serves more than 2,5 million private and business cus-tomers in the Netherlands, Belgium and Germany.

Provided by:

MODELEC
Data-Industrie

Industriële Datacommunicatie

- DDW-221 central redundant ring with 140 point-to-point connections to remote locations.
- 6 DDW-221 and 280 DDW-100 in total.
- Distances up to 12 km.

ful tests with the Westermo DDW-100 and our previous experiences using the Westermo modem family, Alliander made a choice to use the Westermo Ethernet Extender products. Stated Mr. Rens Dekker, Senior Engineer BOS. The key specifications were the galvanic isolation, extended temperature and performance of the DSL-line. Tests were done up to 17 km (10.6 mi). 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). Each point-to-point link consists of two DDW-100s to extend the Ethernet link up to a maximum of 12 km (7.5 mi). In total Alliander will install 6 DDW-221s and 280 DDW-100s to upgrade its gas distribution system into a modern, SCADA controlled and monitored communication system.

A product range to meet every demand

Westermo provides a full range of data communication solutions for such demanding applications as railways, aeronautics, defence, water treatment, substation automation, roads and tunnels. The staff at Westermo can provide the highest levels of service and technical support to help our customers to choose, configure and install the best solution for each specific application requirement. Our knowledge goes far beyond our own product range; we have a unique competence regarding your environment whether it is on a train, in an aeroplane, on the seabed or in a substation. To ensure a close relationship with the customer, Westermo has a local presence in more than 35 countries. The Westermo product line includes more than one thousand different types and versions of our modems, switches, routers, time servers and converters.

DDW-221 Ethernet Extenders

The DDW-221 can be used to extend Ethernet networks over existing copper cables in point-to-point, daisy-chain or redundant ring applications The redundant protocol can be used ether on the SHDSL interface or on the built-in Ethernet switch. Our unique FRNT (Fast Recovery of Network Topology) technology is the fastest protocol on the market to re-configure a network in the event of any failure of a link or hardware.

- Plug and play
- Data rates up to 5,7 Mbit/s
- Distance up to 10 km
- Extensive line protection
- 2 x SHDSL
- SNMP and comprehensive diagnostic
- 16 – 60 VDC power supply
- Reverse polarity protection
- Web interface
- Wide temperaure range – 40°C to +70°C

DDW-100 Ethernet Extender

The DDW-100 is a plug and play Industrial Ethernet SHDSL extender. It is designed as a transparent Ethernet Extender for 10/100BaseTX networks. This unit provides the ability to reuse existing twisted copper pair The DDW-100 is a bridge simple to install with all configuration done by DIP-switches. The DIN rail mounted DDW-100 is designed for industry. It can be powered from two separate supplies.

- 192 kbit/s to 2.3 Mbit/s
- Up to 10 km (6.2 miles) on twisted pair
- FRNT/RSTP redundancy protocol
- Comprehensive diagnostics
- Wide temperature range (–25°C to +70°C
- Galvanic isolation and transient protection
- Industrial and Railway approval
- DC supply 10–60 VDC