

SIXNET[®]

APPLICATION STORY

Contact Information

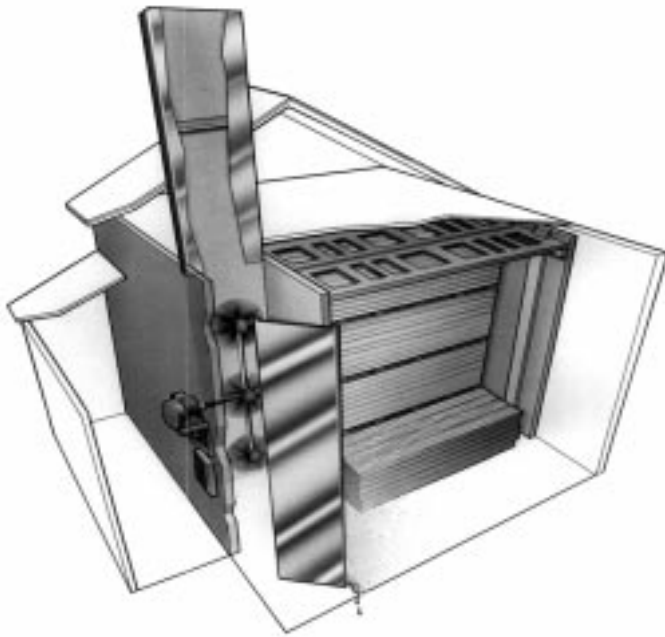
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Innovative Thinking Means Well-Prepared Wood For Sweden

Alent Kilns shortens wood drying time with a unique process that cuts energy consumption by 30%

SYSTEM OVERVIEW

With some SIXTRAK products and a fair amount of Swedish ingenuity, Propac has created a way for Alent Drying Kilns to dry multiple types of wood perfectly, with no warping and little shrinkage.



The fans in the Alent Kiln are driven by a single motor and are reversible to promote even drying. SIXNET modules keep track of the voltage signals and discrete I/O that control the heaters and fans.

Problem: Different thicknesses of wood require different drying times and conditions. Alent processes thousands of pieces of wood.

Solution: Each kiln now has a SIXTRAK Package System that monitors the temperature and humidity and makes intelligent choices on raising/lowering the temperature and amount of water in the air.

The Alent kiln is a combination hot-air and condensation dryer that represents a breakthrough in kiln technology.

With precision temperature control and sophisticated lumber profiles for each size of board created – from the smallest 1x2 to load-bearing 4x4s and 2x12s – the kiln managers use SIXTRAK Gateways and modules to minimize the shrinkage of wood while cutting drying time and energy consumption in the process.

And that saves money both for the sawmills that use it to cure their green boards and the carpenters and homeowners looking for quality building materials at a lower price.

A SmartDrive powers all the fans in the kiln with a single, frequency-controlled motor that allows high temperature and humidity in the kiln. An overhead restraint system prevents the wood from warping and keeps the stack in place as the moisture is removed.

Moisture in the kiln is removed by a combination of condensation and ventilation in a system patented by Alent.

Each kiln has a SIXTRAK cabinet system containing: an Ethernet Gateway running an ISaGRAF IEC 1131-3 program; a PT100 (RTD) temperature I/O module, an instrumentation

input module to read a combination of 4-20 mA and voltage signals and discrete I/O to control the heaters and fans.

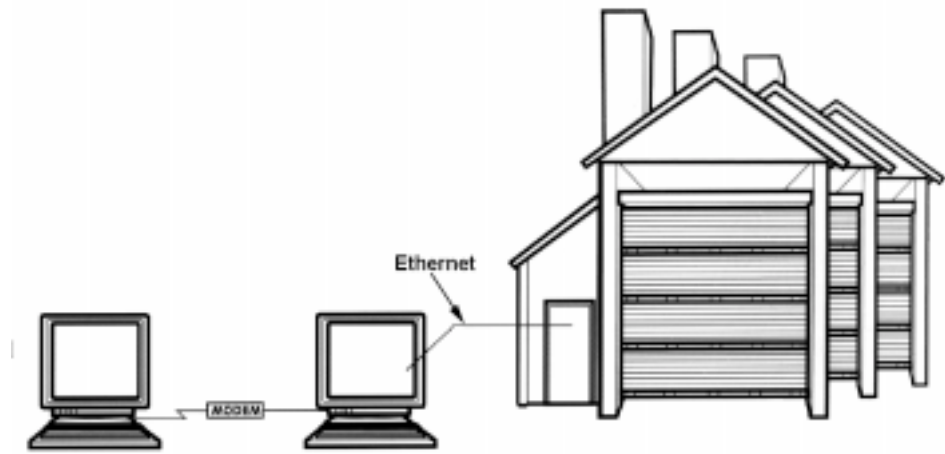
It is interesting to note that there are no discrete inputs because all operator commands are entered through the Windows supervisory screens.

Plant Floor software is used to set up the kiln's controllers. An ISaGRAF program running in the Gateway is responsible for monitoring and running the kilns.

The operators are in complete control – they can change the drying time and moisture content with each batch to better deal with the variability of nature.

The control system was developed by Propac (www.propac.se), a SIXNET Value Added Reseller with experience creating many successful projects.

The SIXTRAK Gateway controls the complex drying process. Up to 30 kilns can be networked into a single operator PC running the Alent Drying Software.



The equipment in each kiln is controlled by a PC onsite – usually in an equipment room just outside the kiln. A telephone modem provides optional remote access.



Workers place the last load of wet wood in Alent's kiln before closing the door. In about half of the traditional time, this lumber will be dry and ready to be used on any building project.

SYSTEM COMPONENTS

SIXTRAK Cabinet with:

- ST-GT-ETH-24P programmable Ethernet Gateway
- ST-AI-RTD-06U RTD module
- ST-AI-INS-08U Instrumentation input module
- ST-DO-AC2-08F AC output module
- ST-DO-RLY-06U relay output module
- One PC with modem for remote control.
- Visual Basic application software in the PC
- ISaGRAF programs running in the SIXTRAK gateway