



International System Integrators

MILLWIDE SOFTWARE, OPTIMIZATION & CONTROL SOLUTIONS



COMPANY PROFILE



## ESTABLISHED IN 1986

The company's management are actively involved in the day to day running of the business along with key Engineers and OEM shareholder/partners Windsor Engineering Group (New Zealand) and Canadian Sawmill manufacturer TS Manufacturing.

Sales and technical staff are based in both New Zealand and the United States and bring the company a wide range of skills including software and PLC design programming, panel building, Electrical Motor Control Centre, design & build, technical writing, CAD drawing and electronic service and support.



**Brian Smith**  
*Managing Director (NZ)*



**Joe Korac**  
*President (USA)*

## Projects Management

We understand that the completion of projects to specified time, cost, quality and performance objectives are important to our customers. All staff are trained in Project management processes to ensure that we identify, monitor and achieve our objectives.

Staff are also well trained in Health and Safety skills and procedures to ensure all projects are completed in a safe manner.

## Quality Control

The Company has a fully implemented TQM (Total Quality Management) to international standards in order to ensure processes are thorough and consistently monitored for continuous improvement.

## Research Development

The Company invests substantially in research and development to ensure it remains at the leading edge and continues to push technological boundaries with new ideas and concepts in areas such as optimization, vision, energy efficiency and environmentally friendly technology.

## About Us

Established in New Zealand in 1986 the business rapidly developed a reputation for innovation and service supporting client installations worldwide.

Twenty years later in 2006 Automation & Electronics USA LLC was established when we acquired the exclusive rights of Silvatech Corporation in the USA and then extended support with engineering based in North Carolina.

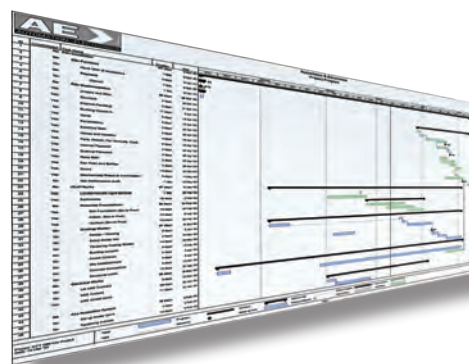
Automation & Electronics has continued to expand and evolve into a highly skilled, progressive company specializing in design, Software development and manufacture of control solutions for industry.

## Projects

We specialize in completing small stand-alone machines through to complete turnkey projects including management of sub-contractors for large scale installations.

Automation & Electronics export business focus is on providing solutions for solid wood processing, specializing in the Sawmilling industry sector, however we have also provided many control solutions for other industry applications including manufacturing, batching, repetitive process along with robotic integration.

We can design, program, install and commission systems involving measurement and control of flow, positioning, sequencing, density, velocity, counting and timing to name a few.



## Training & Support

Training is an essential part of internal development which extends to our clients also for all on-site operational training and supported also with remote broadband and phone support worldwide. Engineers are available for remote or on-site support 24hrs/7days per week.

Clients are also provided with comprehensive manuals and troubleshooting guides.



# LOG HAUL SOLUTIONS

- **Debarker Controls**
- **Sawmill or Log Merchandiser Scanning for Log Volume & Production**

## A&E DEBARKER CONTROLS

Automation & Electronics provides total mill wide solutions throughout the entire sawmill commencing with manual or automatically controlled Debarker automation for continuous log feed to the plant.

Interfaces including wireless control from the Log Loader and in-line safety interlocks can be incorporated into the system which can be controlled by a local PLC or remotely from the Primary breakdown operator control system.

Many of our systems are interface with light curtain X/Y or 3D Scanning to provide the mill with accurate information about log input production.

## SAWMILL *OR* LOG MERCHANDISER

### Scanning For Log Volume & Production

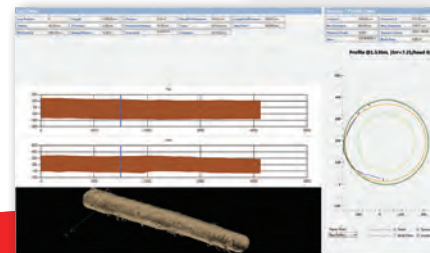
Having good information about production is essential to every modern sawmill or Log Merchandiser. Automation & Electronics X/Y and 3D Trueshape Scanning systems provide your mill with the information your mill requires for knowing exactly how the mill is performing.

Our Scanning systems utilize high speed Ethernet communications to continuously update and profile logs as they enter the mill. We can also define log sort or destination and reject by diameter sweep or profile defect.

We select the right Scanner for the right application from various leading Scanner manufacturers around the world and to date have integrated our software with sensors from ScanMeg, LMI, Hermaty and JoeScan to name a few.

A comprehensive SQL database is provided which includes information as diameter, sweep, bow, SED Small End Diameter, LED large End Diameter, length along with Production information reports such as Volume, Shift, downtime etc.

Some systems also include interface into Sonic testers for density information about the log.



### SCANNING FOR LOG VOLUME & PRODUCTION



# PRIMARY BREAKDOWN SOLUTIONS

## • Log Carriage 3D True Shape Optimization

### LOG CARRIAGE 3D™ TRUE SHAPE OPTIMIZATION

LogView 3D™ is one of Automation & Electronics flagship products which has matured over years of product development.

Features include True Shape 3D profile and optimization for full log breakdown of Cant and boards for both Hardwood and Softwood Sawmills providing options for MOF Minimum Opening Face, BOF Best Opening Face whilst considering zone placement for Cants and sideboards.

Other features include fast laser profile snapshot every 10 inches (250mm) or 5 inches (every 125mm) with full lineal profile every 1 inch (25mm) along the log length combined with setting on the fly.

Advanced features include recovery board feature, Re Scan and manual override, Metric or imperial, Log Historian archive of real images for log simulation and remote broadband support along with a full SQL database which includes production, downtime and alarm reports. Setworks interface is to Allen Bradley, Siemens or other PLC for fully synchronized motion control allowing fast and smooth positioning for log taper.

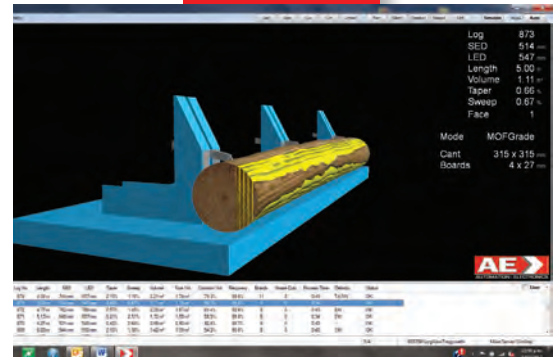
### Log Carriage – Lower Cost Curtain Scanner Option....

For smaller mills that do not desire the Capital cost of the more expensive 3D system we offer a lower cost alternate using a light curtain scanner over the sawline.

One unique feature of our curtain scanner is that it uses a retro reflective sensor that enables the bottom scanner bar to rotate 90 degrees when not in scan mode.

This helps prevent debris build up on the bottom scanner bar which is an inherent problem in earlier generation curtain scanners.

The system runs on the same PLC based Setworks as our 3D system and incorporates a scaled down version of our LogView program to provide log breakdown solution.



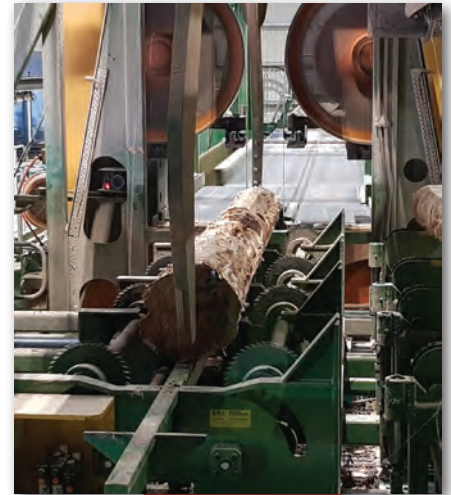


# PRIMARY BREAKDOWN SOLUTIONS

- End Dogging Carriages
- Small Log Lines.....

## A&E END DOGGING CARRIAGES SCANNING & CONTROLS

Automation & Electronics have installed control systems on End Dogging Carriages in both Softwood and Hardwood Sawmills including applications in the Balsa wood sector. Systems are integrated to our A&E Networks controls and incorporate options for manual or 3D Scanning which features skew and rotation positioning for best optimization. We also offer advanced options for Pith detection and offset dogging applications.



## A&E SMALL LOG LINES SCANNING & CONTROLS

Utilizing various scanning technologies for both X/Y and 3D Scanning we provide control solutions for new and existing loglines which incorporate full log and downstream solutions for Gang Edgers and various other secondary breakdown machines.

We have experience with Chipper Canter, Twin and Quadband lines with solutions that consider offset and skew.

We also provide full PLC, Operator Consoles and Motor Control Centers built to USA or Australia/New Zealand standards.



*As international Integrators we are also willing to work with alternate technology Optimization partners to provide controls that integrate with full rotation and slew and skew double length infeeds to ensure customers get the optimum performance from their mill.*

## SECONDARY BREAKDOWN SOLUTIONS

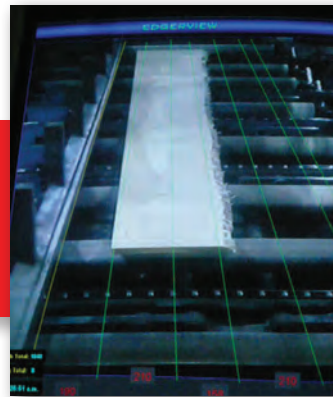
- EdgerView™ – Virtual Operator Interface

### EDGERVIEW™ VIRTUAL OPERATOR INTERFACE



AE EdgerView™ is a virtual operator interface that provides a live video image on screen combined with movable sawlines that interface directly with your Setworks PLC. It can be used in both Green and Dry mills and provides the ability for the operator to make visual grade overrides and manually adjust the sawlines for optimum recovery.

EdgerView™ can also be interfaced to prepositioning and dual sided infeeds. Another advantage is there is no need for Lasers on the machine mean that you have a better view of the machine outfeed, and as the mill no longer needs to be darkened to see lasers this improves the operators ability to see defects.



*We also offer solutions for Gang Edgers which negates the need for many lasers as well as an option for end on view of Cants to enable operators the ability to box out the pith or low grade zone.*



## SECONDARY BREAKDOWN SOLUTIONS

- Edger Optimizer
- Edger Verification Scanner

### A&E EDGER *OR* TRIMMER OPTIMIZER

Automation & Electronics Edger Optimizers are installed in Hardwood and Softwood mills in New Zealand, Australia, Papua New Guinea and the United States of America.

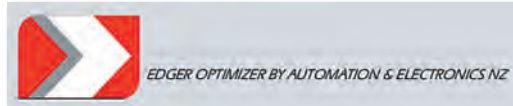
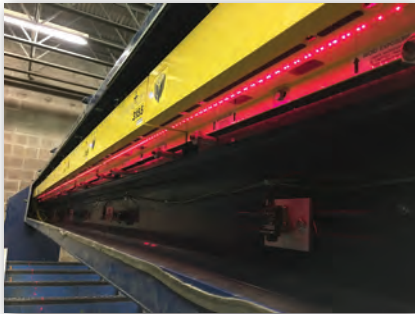
The advanced 3D Optimization software provides high profile wane up/down scanning on transverse and lineal infeeds (also including Slew & Skew or wigglebox solutions). We select the correct sensor for the application using laser scanner sensors from LMI or JoeScan.

Depending on the application, if we are scanning a Flitch, Cant or Roundback will determine which sensor we provide to integrate with our Windows based Optimization combined with SQL database for production reports and PLC control system.

The system is available in both Metric and Imperial and incorporates value and volume based priorities along with adjustable wane rules and zones. We also feature a Board historian program for archiving real images and solutions for simulation.

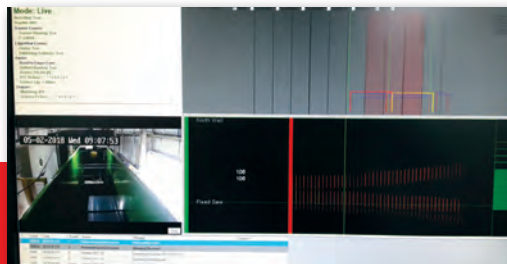
Other features include manual override control and EdgerView™ virtual operator interface for Grade improvement.

A&E is also carrying out extensive Research & Development on automated grading using integrated vision based scanning.



### A&E EDGER VERIFICATION SCANNER

The A&E Verification scanner is a lineal 3D scanner that is located over the Edger outfeed prior to the Picker fingers. The scanner does a lineal scan of board height and width as it leaves the Edger and checks for board separation due to spring. The concept ensures the correct Picker fingers are selected to prevent or significantly reduce good wood going to waste or waste being sent into the mill outfeed transfer.



# SECONDARY BREAKDOWN SOLUTIONS

- Trimline and Tally Solutions

## TRIMLINE & TALLY SOLUTIONS

The TS Accutally and A&E TallyView™ series of controls have been designed to provide instant information about the production performance of the process by monitoring the product at the mills outfeed.

The system provides user friendly interface with configurable data entry and reporting options.

Data is collected and stored in order that historical information about your production can be reviewed.

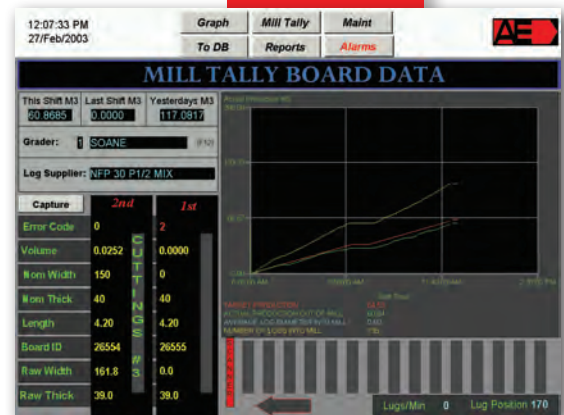
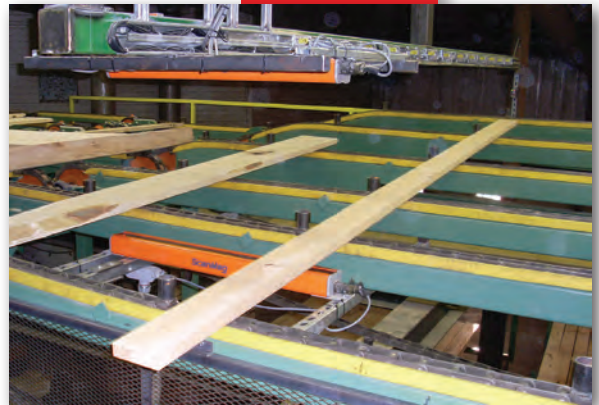
The system accurately measures length, thickness, and width and allows for grade input from a manual entry station or GMR (Grade Mark Reader).

This information is archived in a Windows compatible computer in an SQL database which can communicate with your mills inventory system.

We have to date interfaced from companies IT networks to systems such as SAP, TimberSmart and Elimbs to name a few.

The system can be expanded to provide packet tally information at your sorting table and also generate packet labels with barcode and product information.

**When linked with our Primary breakdown scanning systems we are also able to calculate other mill information such as conversion factors.**



Packet No:	605196	Description:	200X25 C2 RUST H3	
Nom Size:	200 X 25	Volume:	1,484 M3	
Dress Size:	190 X 19	Pieces:	70	
		Metres:	296.8 LM	
1.5:	2.5:	3.5:	4.5:	5.5:
1.6:	2.6:	3.6:	4.6:	5.6:
1.7:	2.7:	3.7:	4.7:	5.7:
1.8:	2.8:	3.8:	4.8:	5.8:
1.9:	2.9:	3.9:	4.9:	5.9:
2.0:	3.0:	4.0:	5.0:	6.0:
2.1:	3.1:	4.1:	5.1:	6.1:
2.2:	3.2:	4.2:	5.2:	6.2:
2.3:	3.3:	4.3:	5.3:	6.3:
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# SECONDARY BREAKDOWN SOLUTIONS

- Stacker Controls and Tally
- A&E Bladeview™

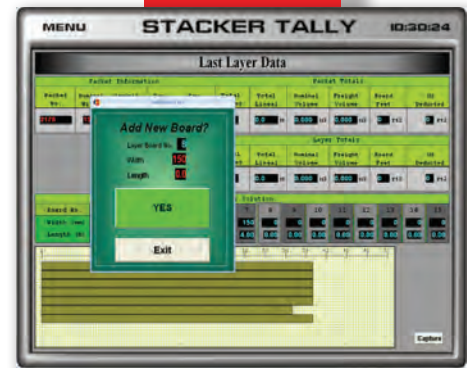
## A&E STACKER CONTROLS & TALLY

Automation & Electronics have commissioned and retrofitted new controls to both new and secondhand Stacking machines.

Our systems are PLC controlled providing fully synchronized servo electric motion control for smooth transition of boards and layers.

Some systems are interfaced to our Stacker Tally Software which provides interface for machine and product dimension setup.

We have commissioned systems with dimensional and random width lumber and generated packet reports and packet labels on a designated label printer.



## A&E BLADEVIEW™

BladeView™ is a saw deviation system which was originally a standalone LCD display with LED Alarm indicators.

Our new generation BladeView is now a Windows 10 based system which provides a much more user-friendly display and interface.

The Software also offers continuous trending of the saw deviation/behavior along with future enhancements that will incorporate saw identification, integration with feed speed verification and new generation sensing systems.



# SECONDARY BREAKDOWN SOLUTIONS

- Bin Sorter Controls
- BladeView

## A&E BIN SORTER CONTROLS BINVIEW™ with TS ACCUTALLY

Bin Sorter control and management system is virtually unlimited and designed to run on a Windows Server, Web interface allows easy “upgrade” system with consistent interface improvements and guaranteed compatibility with Windows Versions.

The Web interface allows Mill Managers/Supervisors/Reporting professionals to all access the system simultaneously from their own desks. Reports can be printed from any computer, and with the upcoming ASP version - can even be accessed on the Smartphone or Tablet device of your choosing (Apple or Android) with no software installs.

Bin assignments are self seeking, so when a bin becomes full, a new one is automatically assigned.

The Sort Pattern for each product can be set up to go into a particular zone of the sorter. Sort Patterns can be defined in formats that allows any combination of widths, thickness, lengths grade or moisture and density types which may be combined with a realistic Sort Pattern and descriptive name.

The Sort Pattern setup is very user friendly to set up for the operator.



We have commissioned and retrofitted new and used Sorters (both lug chain and Jbar style sorters including Tray Sorters & Stackers) in both Softwood and Hardwood sawmills.

Options are available to interface a Grade Mark Reader or Optimized Trimmer as well as remote production displays, integration with your IT Network and remote wireless monitoring via an Ipad or similar device. BinWalker stations may be hard wired electrically or interfaced via remote Ethernet I/O.



### FURTHER SYSTEM FEATURES

System timing is dynamically adjusted according to sorter speed to compensate for mechanical response (lag time) of divertors and other equipment.

By default it can have the following:

- 200 Bins
- 200 Packs after the Bins  
(Plus 200 in the bins if you have 200 bins)
- 500 Active Sorts
- 1000 Active Products
- 2000 Active Sub Products

- The system can natively store 2000 full detailed board data in the PLC. You can increase this amount at 9300 boards per 2mb of additional controller space. System can use AutoBin Haulout features automatically.
- Uses Speed Adjusted Setpoint (requires CIP motion or Artificially Created CIP motion encoder “position” and velocity”)
  - CIP motion encoder is highly recommended for retrofits.
- Sort Plans & Runs can be used for “rapid” changeover. This allows you to select either a run or sort plan to - close bins and disable sorts as groups.
- Significantly simplifying changeover between species or setups.
- The System is entirely SQL Server based with Web Interface.





# NETWORK SYSTEMS

speed - precision - flexibility - quality

Automation & Electronics provide a wide range of Networks solutions for all types of breakdown machinery including Carriages, Twin & Quad bandsaws, Edgers, Resaws, Trimline Fences, Breast Benches and Portable Sawmills.

Features include infinitely programmable setting, species selection, Actuator position feedback, Set on the fly, Optimizer Interface, Programmable Adders and Offsets, fully dynamic Servo Control and built-in Cylinder Shock Absorption.

All systems are fully expandable using module PLC combined with Delta Servo positioning for motion control.

**We utilize common industry established brands such as Allen Bradley, Siemens and Omron PLC products.**



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**Above: Servo Electric Edger (TS Manufacturing)**



**Above: Typical Hydraulic Power Unit**



**Above: Independent Hydraulic Carriage Cylinders**

All systems come with a customized LCD operator interface to provide operators position feedback and the ability to change sizes, kerfs etc.

We offer a range of Servo Electric and Servo Hydraulic tempo sonic positioning systems customized to meet your mills speed and accuracy specifications.

Actuators are sawmill tough and special attention is paid to the selection of seals and wear rings to minimize friction. This allows for greater sensitivity for small position changes combined with high speed capability. They also incorporate Bosch, Ashley, Parker, Rexroth or Moog Valving depending on the mills preference.

All hydraulic systems are based on closed loop circuit design to provide consistent repeatability under load conditions and include appropriate levels of filtration.

Hydraulic Power Units feature heater, pressure compensated pump, return line filter, Accumulator, tank oil level indicator and in some systems also include an oil air cooler combined with electric safety valve to protect servo overrun in the event of loss of feedback position.

Servo motion control is via EtherNet industry standard RMC controllers and where possible we also incorporate remote broadband access for on-line support.

# A&E KILN DRYING SOLUTIONS

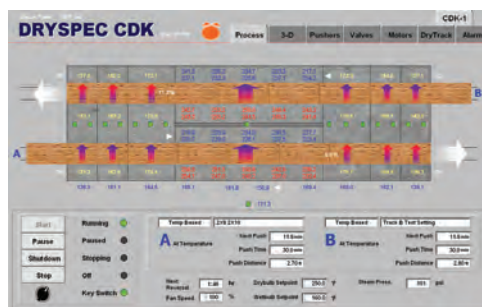
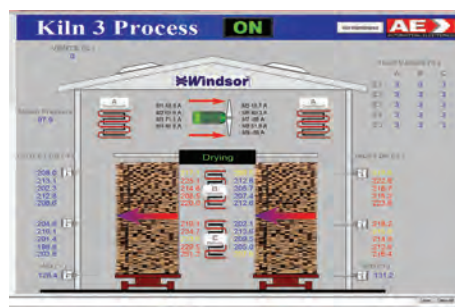
Automation & Electronics has had a long standing partnership with New Zealand based leading Dry Kiln Manufacturer Windsor Engineering Group who are also associated with KDS Windsor who are based in North Carolina USA.

Windsor provides a range of both medium and high temperature kilns that are customized to client needs. Specializing in Softwood drying technology for both batch Kilns and CDK Continuous Drying Kilns which have been successfully installed in both New Zealand and the United States in high production plants who are drying Radiata Pine, Southern Yellow Pine and various other Softwood species. CDK technology has proven to deliver high volumes of lumber whilst at the same time improving lumber quality and providing increased energy efficiency along with being more environmentally friendly.



Automation & Electronics have been closely involved in the development of batch kiln advanced kiln drying which provides leading edge technology for monitoring and controlling drying schedules combined with extensive diagnostic information and reports along with A&E integrated PLC & Motor controls.

- System features include: • Start, pause, restart and stop facility. • Sophisticated multi-step schedule designer including ramps.
- High frequency user-configurable charge plots.
- Adjustable fan reversal timer and speed.
- Vent and control valve position display with manual override. • Manual restart on power failure.
- Endpoint on time. • TDAL, MC or drying progress. • Archiving of charts.
- Powerful reporter for production and process analysis, including downtime logging (configurable) and charge events recording.
- Networking of control and report databases. • EMC calculator. • Configurable alarms.
- Remote broadband access and support.



## Kiln Operator Add-On Options

Kiln Scheduler: used to plan operations to suit future changes.

Condition/Smart ramp: raises the kiln temperature to match the capability of the heat plant.

Maintenance prompts: designed to client's specifications.

Zone control: individual MC values from each zone can be used to control the drying rate in each zone resulting in an evenly dried charge.

Moisture content based endpoint determination.

Energy Management and recording: These add-ons interface the kiln drying and heat plant systems.

Energy Limit base: optimizes the use of the energy source.

Dynamic Priority: prioritizes kiln chambers depending on the stage of drying.

Flow/Pressure based: Flow/Pressure meters are used to monitor kiln usage.



# BOILER CONTROL SYSTEMS

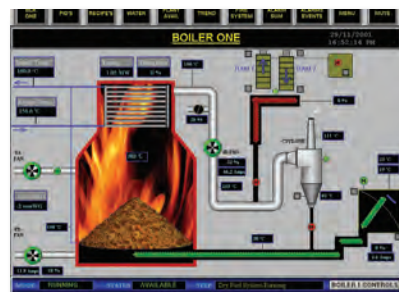
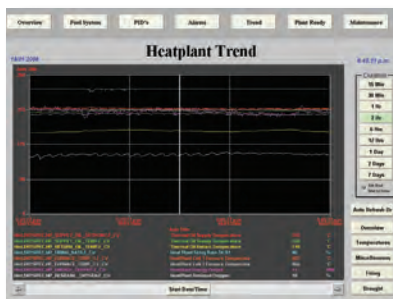
- Boilerview™
- Retrofits to Stress grading and Defecting machines

## BOILERVERVIEW™



**OXYGEN ANALYZER**

BoilerView™ is an integrated software and control package for all types of Boilers. It uses a PLC for controlling the Boiler and a SCADA package running BoilerView software as the visual interface. Some systems can be interfaced to our Dryspec Kiln Software and also to wireless devices such as Ipad's or Cellular phones when operated in unmanned or limited attendance states.



In woodwaste, standard boilers use screws and/or fans to move timber products into the firebox. Combustors use a drying loop to both dry and move the fuel which we often control with the addition of a variable speed drive combined with an Oxygen sensor mounted within the flue to measure and to automatically control fuel air ratio's which provides cleaner burning and higher efficiency.

### Features include

- Remote Access
- Automatic start-up and shutdown sequences
- Database reporting for production statistics such as fuel usage, water treatment chemical usage, opacity logging (smoke production figures for authorities).
- Alarming - direct to pagers, home phones and cell phones
- Historical Alarming
- Trending
- Fire monitoring on fuel hoppers (optional)
- Turbine control (optional)

### RETROFITS TO STRESS GRADING & DEFECTING MACHINES

Automation & Electronics are pleased to be able to offer a solution for updating your existing MSG rather than having to replace the entire machine.

- Easy retrofit to your existing system
- Store unlimited product types
- Real time data monitoring
- Easy one touch calibration
- Off the shelf product
- Low point or board averaging selectable at the touch of a button



We offer our retrofit control solution for upgrading of control and optimization of existing lineal defect lines.



# AUTOMATION & ELECTRONICS

- Supported Products

## SUPPORTED PRODUCTS



Exclusive Distributor And Service Provider  
In New Zealand only for Electromagnetic  
Handheld & In-line Moisture Meters.



### RENS OR METAL SHARK

In-line Full Log Or Wood Waste Metal Detection Systems.



Pin Style Wood Moisture Meters For The Wood Industry.



Solid State Lasers Available In Red And Green  
From 5mW To 30mW.



Laser And Infra-Red Scanning And Sensing Devices.





# AUTOMATION & ELECTRONICS

## • Supported Products - Continued ...

### SUPPORTED PRODUCTS

**SHARPE**

Sawmill Tough Precision Hydraulic Actuators.



**JoeScan**

Industrial 3D Laser Scanners For Sawmill Applications.



**RA Rockwell Automation**

PLC Automation And Sensing Devices For Industry.



**OPTICOM**  
Est. 1979

CCTV Cameras, Monitors and DVR Units Including IP and Analogue Plus Opticom Sawmill Anti Vibration Camera.



**Panasonic**

**SURE GRIP**  
CONTROLS INC.™

Full Range Of Hand Controls And Joystick Bases.





## OEM PARTNERS



Canadian Sawmilling  
Machinery Manufacturers



Advanced Kiln Drying & Energy Manufacturer  
based in New Zealand



New Zealand representative for TS Manufacturing



A.E. GIBSON & SONS *PTY LTD*  
MANUFACTURERS OF SAWMILLING EQUIPMENT



Sawmilling machinery manufacturers based in New Zealand



Cooper Machine Company Inc

## CONTACT US

WE WELCOME ENQUIRES FROM CLIENTS  
AND POTENTIAL OEM PARTNERS



NEW ZEALAND OFFICE  
P.O. Box 4044  
Mt Maunganui 3149  
Ph: + 64 7 5746223  
Email: [sales@automationelec.com](mailto:sales@automationelec.com)  
Web: [www.automationelec.com](http://www.automationelec.com)



UNITED STATES OF AMERICA OFFICE  
6 Winners Circle, Suite 4  
Arden  
NORTH CAROLINA 28704  
Ph: +1 704 200 2350  
Email: [joe@automationelecusa.com](mailto:joe@automationelecusa.com)  
Web: [www.automationelecusa.com](http://www.automationelecusa.com)