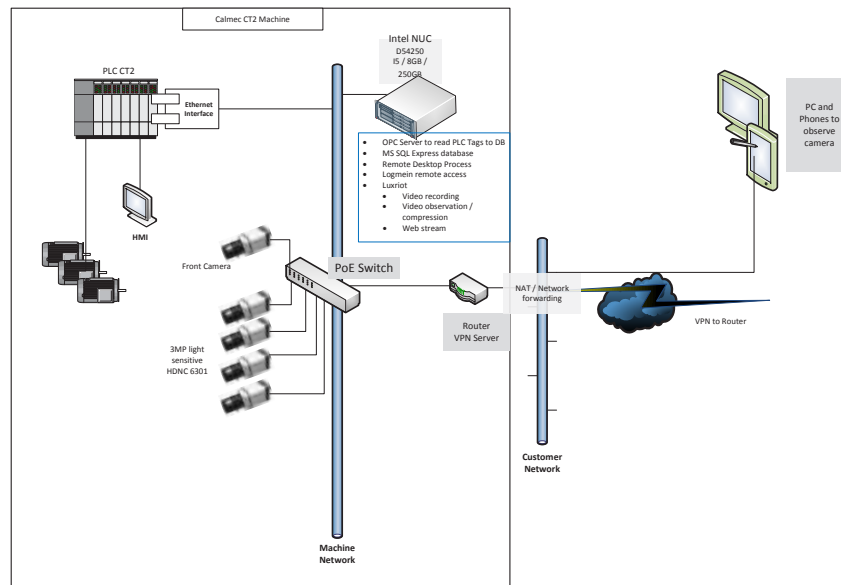


# ARMOURED CABLE MACHINERY

INTERLOCK • FLEX • UMBILICALS • ESP • CONDUIT • TAPING

## CALMEC'S QUALITY AND PERFORMANCE MANAGEMENT TOOLS

As part of a complete Armouring Solution, Calmec offers quality and performance management tools that monitor your manufacturing process to ensure high quality products and improved performance. These tools can be purchased as one complete system or as standalone items.



## DATA ACQUISITION

Through the armouring machine's PLC, the Data Acquisition System captures all operator interface data, along with operational parameters such as line speed, length count, temperature sensors, and diameter monitoring; all process parameters associated with a particular production run.

- Data can be integrated into any factory control system for analysis
- Data can be accessed remotely from a mobile phone
- Tracking of machine uptime and downtime, all alarms and machine faults, as well as overall system performance
- Data logging of production runs that can be tagged by customer product codes



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## ENVIRONMENTAL OBSERVATION

The Environmental Observation System allows critical areas of the manufacturing process to be monitored real time.

- Live video is displayed from multiple cameras on a large screen LED TV at the operator's main work area
- Remote surveillance through networked computer, mobile or handheld device. Video is recorded and stored for up to 24 hours



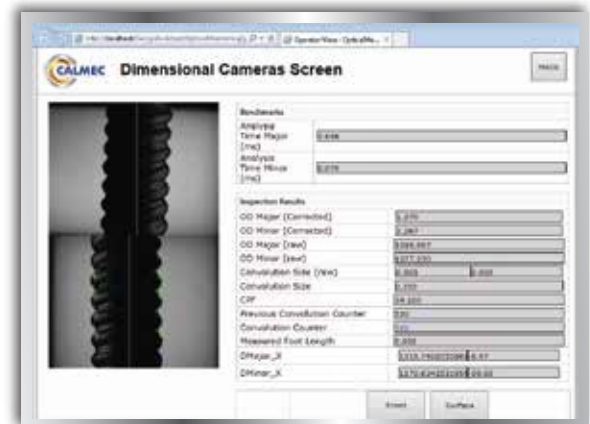
## VISION MONITORING SYSTEM

A mobile real time Vision Monitoring System that will monitor product dimensions and surface defects of interlocked armoured cables as they are produced, while simultaneously providing both convolution and length counts.

### DIMENSIONING ('D' STATION)

Two axis dimensional monitoring of round or flat armoured cables.

- Dimensional accuracy;  $\pm 0.002$ " for 3/8" - 2" product range.
- Convolution count with displayed pitch length
- Production length measurement
- Overall length accuracy;  $\pm 1$  Convolution length or tape pitch.
- Alarms for warning and critical out of tolerance conditions
- Industrial PC with colour touchscreen display
- Recipe driven process settings



### SURFACE DETECTION ('S' STATION)

Monitoring of the entire perimeter of the armoured product for defects.

- Three (3) cameras for round products; four (4) for flat cables
- Alarms for armour abnormalities
- Time, date and length count stamped images of abnormalities

