# ARMOURED CABLE MACHINERY

INTERLOCK • FLEX • UMBILICALS • ESP • CONDUIT • TAPING

CMVS - MACHINE VISION FOR ARMOURED CABLE

Calmec's Machine Vision System provides a new, innovative, and practical approach for dimensional monitoring of convoluted or corrugated products. This real-time non-contact Machine Vision System continuously monitors the product in an integrated approach, as compared to traditional non-contact measurement systems. The armour is digitized using high resolution imaging, with data analyzed by advanced computational algorithms that measure multiple parameters.
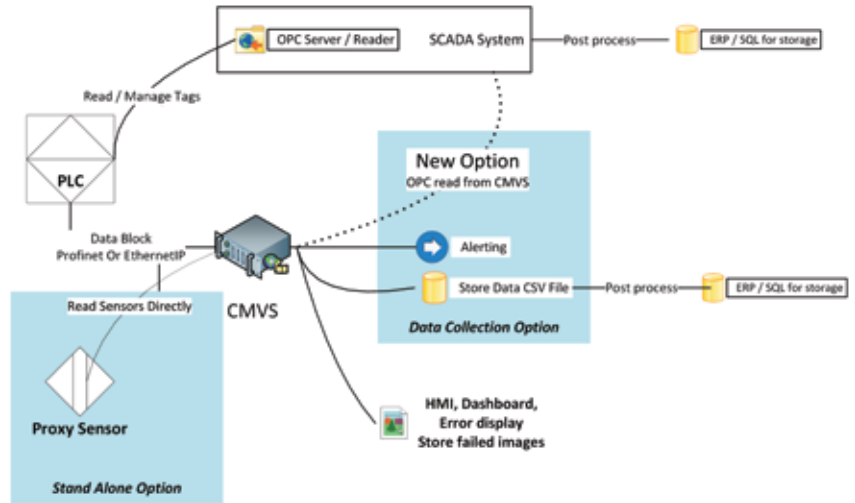
Key Features

- Direct feedback to the Armouring Machine PLC with optional closed loop feedback.
- Data centre friendly for flexible post processing, trending, machine learning, external processes.
- Upgradeable for enhanced features and optional modules
- Future proof software methodology
- Optional data collection logging files and posting to OPC server
- Optional integration for machines with inaccessible PLC
- 3rd generation compact design
- Optional mounting configurations

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Measurements

- Product range 3/8" to 5" diameter with pitch size 0.2"-1.0" (12 - 60 convolu-tions/foot)
- Dimensional accuracy as low as ±.002"
- Convolution count with displayed pitch length
- Production length measurement (with convolution counter reference)
- Alarms for warning and critical out of tolerance conditions
- Recipe driven process settings pushed direct from the Armouring Machine PLC
- Optional ProfiNet or EthernetIP interface
- Data storage and Industry 4.0 data acquistion capability (optional OPC & SQL data storage)
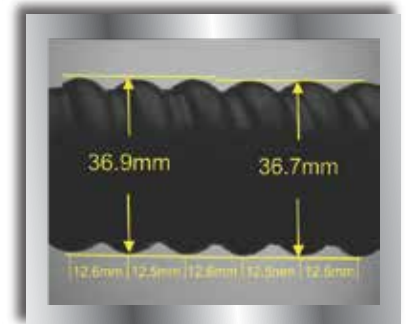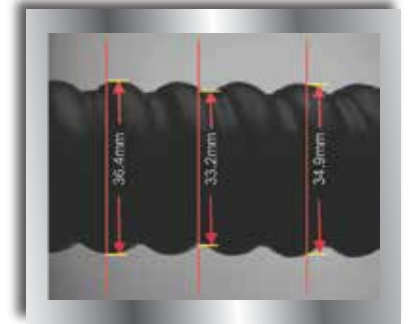
Touchscreen Interface

- Interactive HMI with browser based remote display
- Failure data and image logging
- Flexible display options and visual feedback
- Flexible data acquisition display
- Direct feedback to Machine PLC with full response

A unique benefit of Calmec's Machine Vision System is that the features of the convoluted product can be analyzed and interpreted into multiple measurements including diameter, pitch, and convolution count. While traditional laser based measurement has shown to be highly accurate with tolerances as low as ±0.0001", they are challenged to recognize non-uniform product features. Although a machine vision based system will have an inherent lower accuracy (better on smaller product versions), in operational terms it provides a practical benefit of providing stable measurements across the monitored product.

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