



UPGRADE OF LEGACY SYSTEMS UNIVERSAL SCANNER/SENSOR INTERFACE

The Universal Scanner/Sensor Interface offers a cost-effective solution to upgrade existing papermachine quality control systems (QCS) to open systems featuring modern industrial networks. The interface substitutes state-of-the-art programmable logic controller (PLC), microcontroller and software technologies for the proprietary electronics of legacy systems. The Universal Scanner/Sensor Interface controls the scanner, builds cross machine profiles such as basis weight and moisture and emulates communication protocols for connectivity to external systems. Signals from measurement sensors can be processed by the PLC or sensors can be upgraded to smart, network-ready gauges for direct connection to the network. Digital data is transmitted to the host or external system via Ethernet or serial communication. Proven industrial grade PLC modules ensure reliable performance in the paper mill environment.

FEATURES	BENEFITS
<ul style="list-style-type: none"> • Programmable scanner driver 	<ul style="list-style-type: none"> • Can be applied to any papermachine scanner
<ul style="list-style-type: none"> • Smart sensors 	<ul style="list-style-type: none"> • Supports nuclear, infrared and microwave sensors
<ul style="list-style-type: none"> • Up to 256 data boxes 	<ul style="list-style-type: none"> • High resolution profiles
<ul style="list-style-type: none"> • Standard hardware, miniature electronics 	<ul style="list-style-type: none"> • Low installation and maintenance costs
<ul style="list-style-type: none"> • Network connectivity 	<ul style="list-style-type: none"> • Allows communication to third party system
<ul style="list-style-type: none"> • Remote access 	<ul style="list-style-type: none"> • Low cost technical support

Scanner and Sensor Interface

The scanner and sensor interface provides all the functions necessary to interface legacy papermachine QCS scanners and sensors to a host computer or distributed control system (DCS). It controls the off sheet, scan, fixed point and sensor standardization functions of the scanner, calculates sheet width, performs signal acquisition from the measurement sensors, builds cross direction profiles, transfers digital data using industry standard communication protocols and emulates communication protocols of other external systems.

The interface consists of a programmable logic controller (PLC) and software to provide the programming flexibility to adapt to various scanner drive mechanisms including 3 phase and DC motor. The PLC provides the platform to support a variety of sensors including nuclear gauges for basis weight measurement, infrared and microwave gauges for moisture measurement, sheet temperature and magnetic reluctance gauges for caliper measurement.

The measurement sensors can also be upgraded to smart network-ready gauges by substituting a modern microcontroller board and power supply for the obsolete sensor support electronics. Upgraded sensors feature plug and play connectivity to industry standard networks using Ethernet TCP/IP protocols. The smart sensors coupled with the smart scanner form a QCS network that provides unlimited connectivity to external PC platforms, DCS and external systems. The microcontroller electronics is rated for industrial applications and can be installed to accommodate most QCS sensors.

Ease of maintenance

The QCS network can be accessed locally or remotely, through any computer with Internet connection. Scanner and sensor diagnostic data can be viewed and analyzed by simply calling the web server of the specific system component.

Specifications

Input:	Analog, frequency signals from measurement sensors Digital position encoder from scanner Sheet break signal from papermachine
Output:	Ethernet TCP/IP Modbus Serial Modbus Ethernet EthernetIP™ Serial ASCII
Profile resolution:	Up to 256 data boxes
Temperature:	85°C
Power requirements:	115/230/VAC 60/50 Hz. UPS required

Upgrade of Legacy System Typical Configuration

