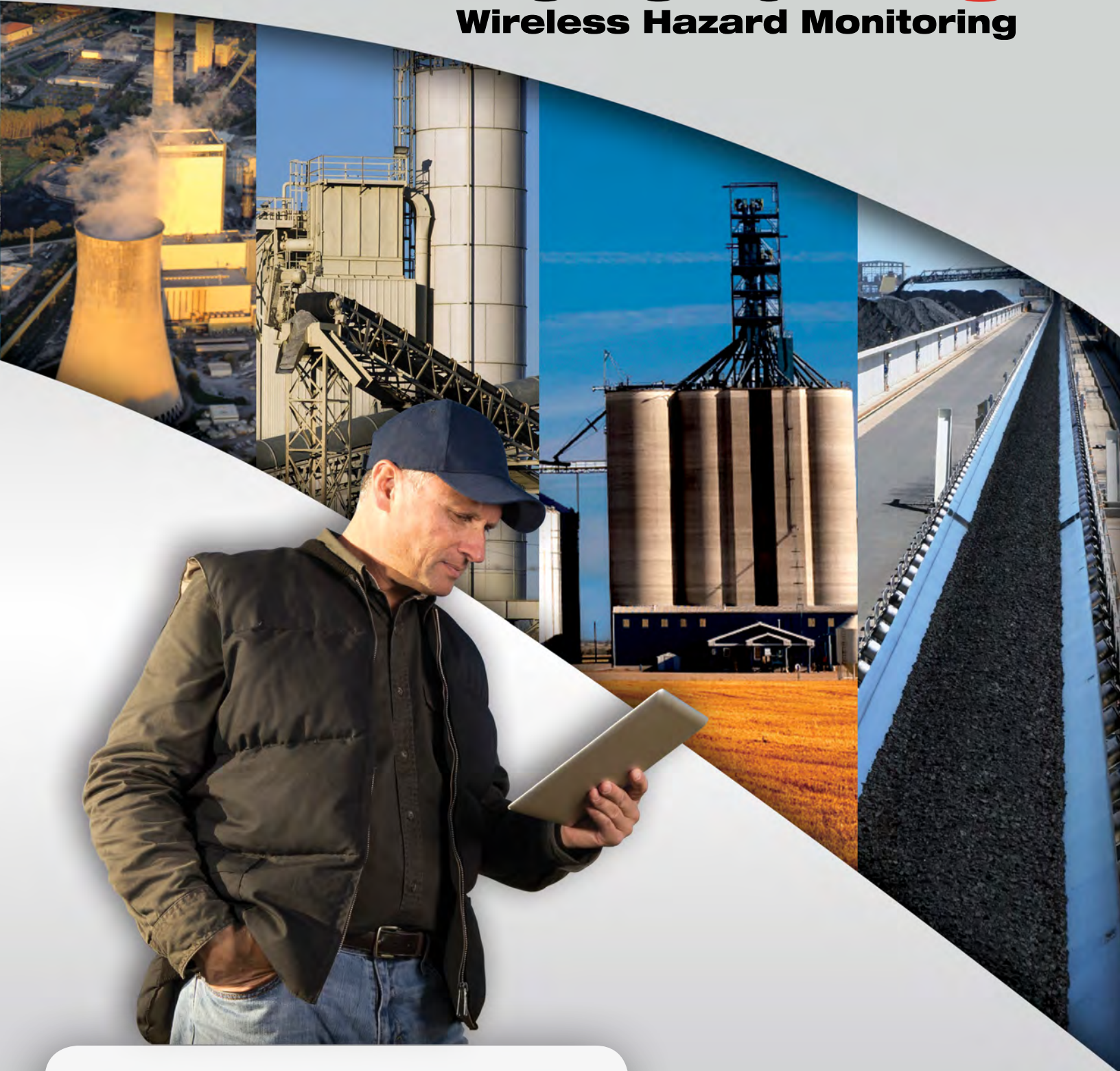


HazardPRO™

Wireless Hazard Monitoring



Electro-Sensors is revolutionizing the way hazard monitoring is done with its turnkey **HazardPRO™** systems. Rugged sensors and the most advanced wireless technology combine together to create the best hazard monitoring solution with the lowest installed cost.



Reliable • Simple • Complete

When it comes to hazard monitoring, we know it simply has to work. **HazardPRO** was designed from the ground up to provide turnkey, reliable, and consistent protection for your most valuable assets, products, facilities, and most importantly, people. Consistent operation is ensured with built-in tools such as self-diagnostics, transmission logging, and redundant transceivers providing you confidence that your critical processes are being monitored and logged at all times.

As a truly integrated system built expressly for hazard monitoring, **HazardPRO** captures and displays key information in an intuitive format allowing the user to quickly and comprehensively understand the status of their processes. The simple but powerful interface will give you insight into your operations as you strive to maximize safety and facility runtime, while minimizing costs associated with unscheduled downtime and unplanned maintenance.

Status At-A-Glance

- Quickly view what processes are running and their condition from the status screen
- Easy touchscreen navigation guides the user through equipment information

Real-Time Information

Intelligent transmitter nodes send information both on a scheduled periodic basis and when important changes are detected, ensuring that there are no polling delays or lapses in monitoring.

- Live charts continually update
- View sensor status over time leading up to an event
- Evaluate trending with interactive history charts
- Data, alerts, and alarms available through secured wireless networks
- Access information via tablets, smartphones, and PCs with Internet access

Accountability & Security

- User access levels are set by plant administrators
- Events are automatically logged for review
- Only users with password-validated authority can edit or close events
- Users can document event cause and resolution
- Full password protection secures Internet access

Full Integration With Your Controls

Easily integrate to your existing plant control or PLC system via:

- Modbus TCP/IP communication
- A traditional switch input/relay output system

Wear-Detect Belt Alignment

- No need to shut down the conveyor belt for rub block inspection
- A warning will be displayed when a replacement belt alignment sensor is needed
- Rate-of-rise setpoints provide additional protection

Ambient Sensors – Fewer False Alarms

- Multiple ambient temperature sensors automatically adjust setpoints eliminating the need for broad setpoint ranges
- Absolute shutdown settings are maintained to prevent catastrophic events

Approvals

HazardPRO Node

- Intrinsically Safe Outputs
-Class II, Div 2, Groups F, G



HazardPRO Sensors

- Intrinsically Safe for:
-Class II, Div 1, Groups E, F, G
-Class III, Div 1

Industries Served

- Grain, Feed & Milling
- Mining
- Ethanol Processing
- Water Utilities
- Biofuels Processing
- Food Processing
- Wastewater Processing
- Power Generation

FEATURES & CONCEPT

Shaft Speed



Bearing Temperature



Ambient Temperature



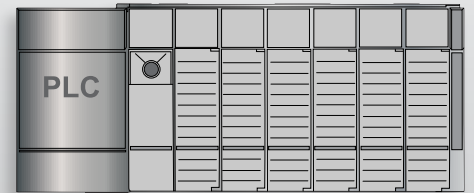
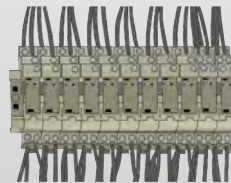
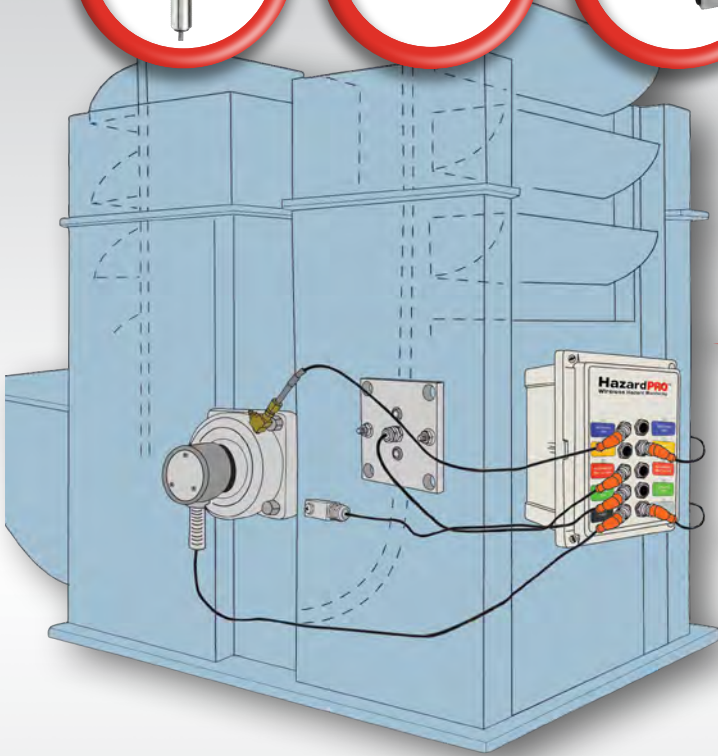
Belt Alignment



Transmitter Node



System Manager



Remote Access

- PC/Laptop
- Tablet
- Smartphone

Plant Control System

- Modbus TCP/IP
- Control Relays "Run/Stop"
- Control Switches "Run/Stop"

Any device, anytime, anywhere.

View status, receive and respond to alerts, silence alarms, or shut down equipment.



HazardPRO™

Wireless Hazard Monitoring

HazardPRO XL ▶
System Manager
System Status Screen

HazardPRO™ XL

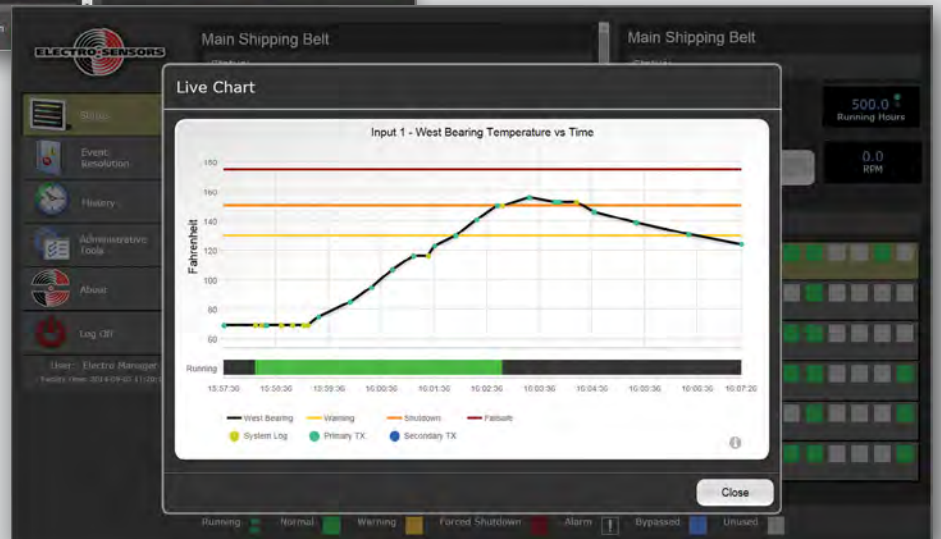
Wireless Hazard Monitoring



◀ **Node View Screen**

Sensor values, setpoints, and alarm conditions

Sensor Trend Screen ▶
Live Chart

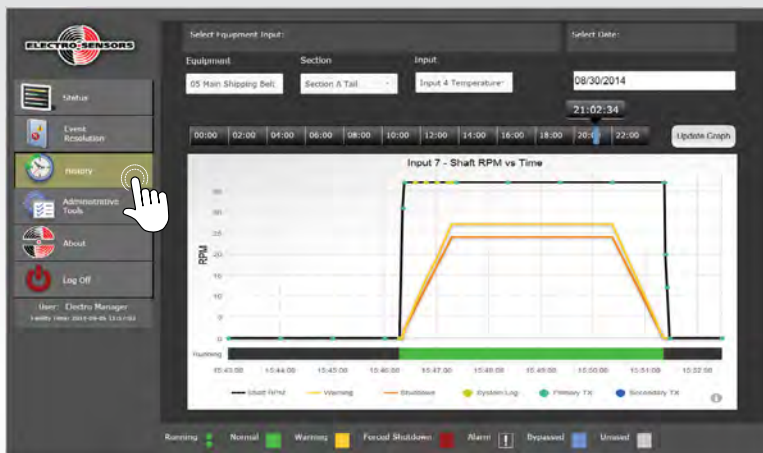


USER INTERFACE



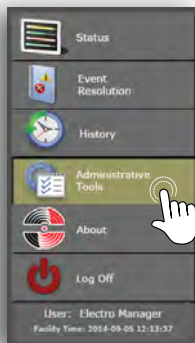
Event Screen

- Time-stamped event log
- Event overview details with graphical snapshot and input identification
- Cause of event and resolution text fields for logging event information
- Sign-off and date stamp



History Screen

- Historical graph for all sensors
- Selectable 24-hour window
- 1+ year history log
- Internal data storage



- 1 Quickly and easily add equipment as needed
- 2 Warning/shutdown events and resolutions are archived
- 3 Set the company's facility information
- 4 View gateway information and enter/edit settings
- 5 Allows periodic conveyor operation in cold weather to prevent freeze-up
- 6 View PLC and I/O board interface information and enter/edit settings
- 7 Enter email addresses for select individuals to receive notifications for specified events
- 8 Slowdown test to verify the correct operation of the hazard monitoring system and the plant control system
- 9 View and print historical slowdown test reports
- 10 Set the system-wide default settings
- 11 Modify and/or add new users to the system



HazardPRO™

Wireless Hazard Monitoring

System Manager

- Modbus TCP/IP Communication
- SPDT relay for each piece of equipment plus one for warning notification
- Controlled levels of authority
- Real-time information and live charting
- Redundant transceivers for error-free communication

Sizes

- XS (1-4 pieces of equipment, 15" touchscreen)
- XM (Up to 16 pieces of equipment, 15" touchscreen)
- XL (Up to 32 pieces of equipment, 21" touchscreen)



FAQ

- **How do you know that the signal will get through and that no transmissions are missed?**
Every time a transmission is sent, an acknowledgement must be returned by the receiver. The transmitter uses different channel frequencies on retries to ensure that the data gets through. Each transmission is logged and regular "health" checks must arrive when they are expected.
- **Why does HazardPRO have the "lowest installed cost"?**
HazardPRO does not require the conduit or labor costs that are required to install traditional hazard monitoring systems. The HazardPRO system is shipped pre-programmed and adding new equipment does not require custom coding.
- **Will HazardPRO interface with my existing controls?**
Yes. HazardPRO communicates directly to your control center via Modbus TCP/IP or with built-in relays.
- **What kind of routine maintenance is required for HazardPRO?**
The HazardPRO transmitter node is powered by a battery with a life expectancy of 5+ years. The belt alignment sensor will also need to be changed periodically. The system will alert the user when a replacement battery or belt alignment sensor is needed.
- **How does HazardPRO ensure data security?**
Remote access to HazardPRO data is only accessible through a VPN router which requires user and password verification before allowing access. Facility managers can set up accounts and permissions for on-site operators.

SYSTEM COMPONENTS



Transmitter Node

- Transmit-on-change keeps data current
- Heartbeat transmissions verify reliable communications
- Quick-connect sensors for easy installation
- No external power
- 5+ year battery life
- 10 inputs for speed, belt alignment, bearing temperature, ambient, and contact closure



▲ Shown with EZ-3/4in and mounting magnet

Shaft Speed Sensor

- Automatic calibration of 10 and 20 percent slowdown
- Multiple mounting configurations
- Optional mounting magnet if shaft is not tapped



Bearing Temperature Sensor

- No calibration required, setpoints adjusted to ambient sensor
- Stainless steel probe with Zerk (grease) fitting
- Probe lengths available 4", 6", 8", 10"
- Replaces existing Zerk (grease) fitting



Ambient Temperature Sensor

- Monitoring local ambient temperature continuously adjusts setpoints on bearing and belt alignment sensors
- Multi-point placement on each side of equipment for highly accurate tracking



Belt Alignment Sensor

- Brass rub block with easy-install mounting plate
- No calibration required, setpoints adjusted to ambient sensor
- Built-in, wear-detect feature notifies user when the belt alignment sensor needs to be replaced



Stud Sensor

- Compatible with any standard Electro-Sensors rub block
- Intrinsically safe 3/8-16 temperature probe



Optional Cabling

- Flexible armored steel cable (2-10 (m) per cable)
- Flexible poly-propylene cable (2-10 (m) per cable)
- Additional cable extension available

Notes: 5-year warranty on System Components, 1-year on System Manager.

