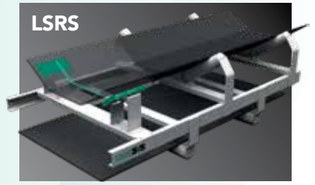
The EMSYS Conveyor Belt Protection System

EMSYS provides a series of Rip Detection and Monitoring products and solutions. Conveyor belts are subject to damage (longitudinal belt rips) through the foreign objects or in heavy use areas like loading, unloading. The EMSYS solutions are designed to work together to detect and notify or correct for issues such as rips or holes in the belt, edge damage and misalignment.

The EMSYS WSR uses RFID Technology to provide a reference point and the belt is then operated for several revolutions. Measurements are taken every few centimeters and the WSR system learns the width of the conveyor for its entire belt length as a baseline. If the belt is ripped, the width of the belt will change and trigger a signal and/or stop the belt.



The EMSYS LSRS monitors the belt via embedded wires that can detect rips and damage to the belt through SmartWire® technology.
The LSRS will read most major belt manufacturers rip detection loops and antennae.
SmartWire can be embedded in a newly manufactured belt or retrofit into an existing belt in under an hour.

EMSYS offers the Belt Steering Gear (BSG) system to provide precise belt alignment control and monitoring of the belt tracking, onsite or remotely via an application on your phone or tablet.
A combination of an actuator and sensors and idlers before and after this sensor can detect and correct any belt misalignment, even remotely.

The LSRS Retrofit Kit

The EMSYS SmartWire system is a cost-effective retrofit wire solution for a belt with broken loops. A SmartWire can be installed within 30-40 minutes versus 4-6 hours for most other loop system installs. The LSRS Retrofit comes with everything you need for retrofitting SmartWire system into your belt:

- Rubber grooving/skiving tool and drill-mounted winch – to remove the strip of rubber required for the SmartWire
- Press and control box

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ALMEX GROUP

EMSYS

BELT RIP DETECTION

LSRS

BELT RIP DETECTION - LSRS

Current product offerings for rip detection of conveyor belts use copper wire loops or antenna that when being cut or torn, would send a signal to stop the conveyor belt and prevent a further rip. These old analog systems have no intelligence and are prone to broken loops.

The EMSYS LSRS is an intelligent RFID-based "SmartWire" rip detection and monitoring solution. Unlike traditional loops that expect a signal every set distance, SmartWires and are able to hold data such as a unique identifier, position in the belt, serial number, and manufacture and install dates.

The LSRS monitoring unit can also read most belt manufacture loops or antennae which provides a cost-effective and long-lasting solution for both new conveyor belt installs and retrofitting of old belt with broken loops. The LSRS has an IP-65 rating, is ATEX certified and UL and CE approved.

ARCHITECTURE & TECHNOLOGY

The LSRS is a digital-based monitoring solution, not the analog relay of older loop monitoring systems which enables; a greater precision on the speed sampling to be read dependably and instantaneously to the PLC and integrate with the other EMSYS Systems such as WSR and BSG (Belt Steering Gear).

UNIVERSAL COMPATIBILITY

The LSRS Receiver and Transmitter units read a much larger area of the loop which enables it to read other manufacturer loops.

The LSRS is the only digital rip detection solution that can work with and supplement or replace other manufacturers broken loops, but no other rip detection system can read the SmartWire system.

SMARTWIRE DURABILITY

The SmartWire system is available in two forms; one for being manufactured into a new belt and one encased for retrofitting into existing belts. The heart of SmartWire technology is a braided Kevlar core spiral wound with wire for optimum conductivity and durability. The ends are encased in resin to secure the soldered joints and the wire is stitched onto an impact resistant, strong and flexible breaker fabric, making the SmartWire less likely to break. SmartWire has a 1-year standard warranty on its construction.

RETROFITABILITY

The LSRS with SmartWire can be retrofit into an existing belt with broken loops quickly given its smaller size and linear design. Each SmartWire can be placed within 40 minutes versus a 6 hour average for most other rip detection loop replacements. This provides a significant cost savings of time and labor in getting a rip monitoring and detections system in good operating condition quickly. There is an LSRS Retrofit kit available containing a Rubber Skiver, winch, vulcanizing press and control box.

DATA SCANNING

The Receiver-Processing and Transmitter units, detects the individual SmartWires, their position and their data in the conveyor belt and feeds the information into a PLC unit or a tablet application.

APPLICATION MONITORING

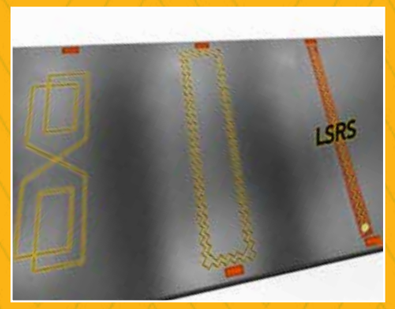
Monitoring of the belt rip detection can be done via a tablet application and Bluetooth signal. The monitoring data can also be incorporated into the site control operations.

SMARTWIRE

SmartWire is constructed of a Kevlar braided core, spiral wound for conductivity, with resin-encased joints and stitched onto impact resistant breaker fabric. The version shown here is meant to be installed in new belt. A retrofit version, ready for vulcanization, is also available.

UNIVERSAL COMPATIBILITY

EMSYS LSRS and SmartWire is compatible with and able to read existing loop systems of most of the major belt manufacturers such as Coal Control, Becker, Contitech and Fenner Dunlop.



RETROFITABILITY

Existing belt with or without broken loops can be retrofit with SmartWire and the LSRS system quickly and more cost-effectively than other rip monitoring loop solutions. A SmartWire can inserted and ready for use in ~40 minutes.

LOOP SURFACE COVERAGE

The LSRS digital transmitter and receivers can read a greater surface area of the loop due to our highly engineered digital technology. This larger scanned area helps loop readability and prevent false positives, even in the harshest environments.