BRMS-LSRS

belt rip monitoring with loop sensors + RFID

Description
Belt conveyors are subject to damage (longitudinal belt rips) mainly through the impact of foreign objects; the loading and discharging areas being the most commonly endangered points. The BRMS-LSRS allows the monitoring of these areas and the minimizing of belt damage as a function of the Belt Sensor (Inductive loop and/or SmartWire) spacing. The belt rip monitoring system BRMS-LSRS is installed at the endangered points on the conveyor system. The system detects Loops and/or SmartWires embedded in the belt. The intelligent receiver unit is able to capture all different types of inductive loops, SmartWires and RFID-Tags embedded in the belt. The BRMS-LSRS can easily be integrated into the existing System-/Plant infrastructure. The transmission of the locally analyzed measurement data, settings and system parameters is provided through MODBUS by WiFi and RS485.

Advantages
retrofittable • easy operation • compact design • highest reliability • multi-communication options • maintenance free
Construction

1. Transmitter Unit
2. Receiver-Processing Unit
3. Sensor Twin Idler
4. Chassis
5. Display-/Control Unit

Smart Wire

Function
The signal transmitted by the transmitter unit is linked up to the receiver unit via the passing intact conductor loop. A SmartWire passing the Transmitter and Receiver Unit sends a unique identification and status of the SmartWire to the Receiver unit. A combination of an inductive loop and SmartWire is called SmartLoop and provides dissimilar redundancy as both single belt sensors must indicate a rip status.

The embedded Reference Tags provide an explicit point of reference throughout the complete belt. During a learn cycle the system identifies the position of each embedded belt sensor related to the point of reference.

\[ L = 600 \text{ to } 2000\text{mm} \]
\[ B = 25\text{mm} \]
Technical data

Unit-specific data
- belt width: universal
- Belt conveyor length: universal
- Belt type: steel-cord; textile
- Belt conveyor velocity: ≤ 10.00m/s

Receiver-/Processing Unit

- Frequency range (Loop Detection): 50kHz
- Frequency range (RFID Detection): UHF
- Input voltage: 11 - 13.5VDC
- Power consumption: ≤ 1.2 A
- IP-Code: IP 65
- Input/Outputs: Connecting system: EMSYS module plug system
- Operating temperature range: -20°C ≤ TA ≤ +60°C
- Dimension (HxWxD): approx. 55 x 400 x 250mm
- Weight: approx. 2.5kg
Transmitter Unit

- Frequency range (Loop Detection) .................................................. 50kHz
- Frequency range (RFID Detection) .................................................. UHF
- Input voltage .............................................................................. 11 - 13.5VDC
- Power consumption ................................................................. ≤ 1.2 A
- IP-Code ....................................................................................... IP 65
- Input/Outputs .............................................................................. Connecting system: EMSYS module plug system
- Operating temperature range .................................................. -20°C ≤ TA ≤ +60°C
- Dimension (H x W x D) ............................................................. approx. 55 x 400 x 250mm
- Weight ....................................................................................... approx. 2.5kg
Sensor twin idler

Two-wire Namur transmitter for distance impulses

- Frequency range (Loop Detection): 50kHz
- Frequency range (RFID Detection): UHF
- Input voltage: 11 - 13.5 V DC
- Power consumption: < 1.2 A
- IP Code: IP 65
- Input/Outputs: Connecting system: EMSYS module plug system
- Operating temperature range: -20ºC ≤ TA ≤ +60ºC
- Dimension (H x W x D): approx. 55 x 400 x 250mm
- Weight: approx. 2.5kg

Two-wire Namur transmitter for distance impulses
- Supply voltage nominal: 8.2 V DC
- Switching frequency: 1 kHz
- Resolution: 0.47 m/Impuls
- Direction recognition: optional

BRMS-LSRS
- IP Code: IP 65
- Operating temperature range: -20ºC ≤ TA ≤ +60ºC
- Standard design: CE