



## Advanced Technology Driving Change

## WiTAP™ Material Loss (Wear) Monitoring

### FEATURES

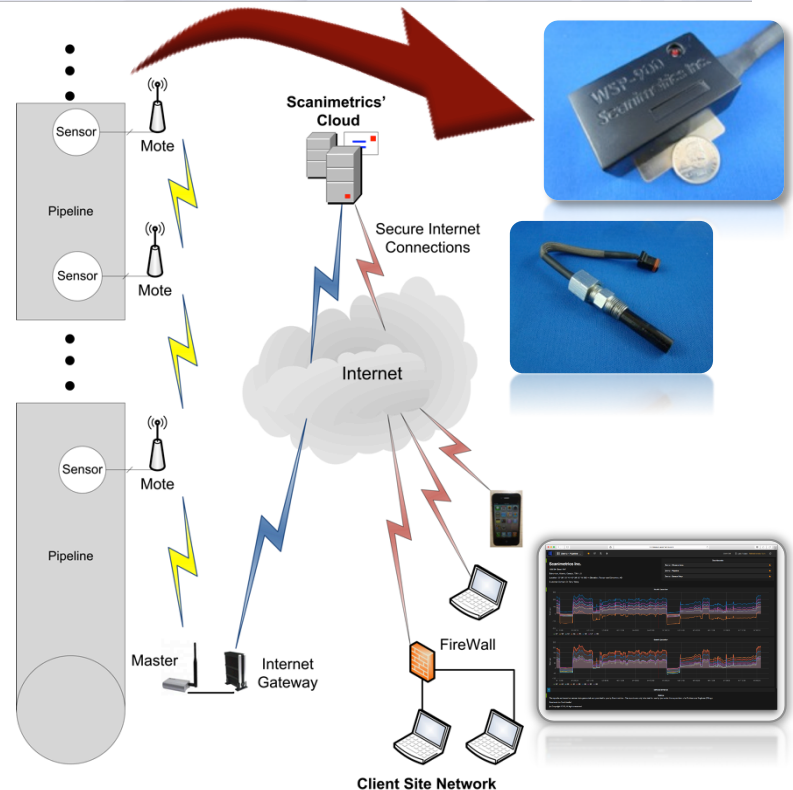
- Monitor thickness of single and multi layer materials
- Through-the-wall or Ultrasonic sensors
- Multipoint measurements
- Asset orientation measurement
- Rugged enclosure
- Easy to install and low cost
- Wireless data transmitted to:
  - MoteScan™ Cloud via Cellular Network
  - MoteScan™ Cloud via Wi-Fi
  - MoteScan™ Cloud via Satellite
- Data aggregation, trending and analytics
- Alarm notification via email, text & voice message
- Integrated battery, no external power needed
- Unique ID for electronic tagging
- Built-in signal conditioning and calibration
- Built-in temperature sensor
- Interval logging capability
- Redundant storage
- Network status (e.g. battery, RF link quality)

### BENEFITS

- More accurate and frequent measurements
- Optimize asset maintenance
- Extend asset life
- Better predictive modeling
- Reduce field failures and production loss

### GENERAL DESCRIPTION

The *Wireless Material Loss (Wear) Monitoring System* provides an easy automated means of accurately monitoring thickness of high wear components on assets with a high degree of repeatability for Condition-Based Maintenance (CBM) applications. Pipelines which have excessive wear, such as slurry, tailings and certain oil and gas pipelines, significantly benefit from such monitoring since it enables the pipe to be rotated or serviced in an optimal manner to achieve extended pipe life. Competitive systems that monitor pipe wear are not cost-effective to deploy on a wide-scale, such as to monitor an entire pipeline, do not work with all types of materials (metallic or non-metallic), and do not work with lined components (multilayered wear surfaces). Manual monitoring is unreliable and extremely labour intensive, thus, not useful for predictive modeling. Scanimetrix' *Wireless Material Loss (Wear) Monitoring System* is cost-effective for wide-scale deployment, works with all type of materials, works with multilayered wear surfaces, and provides continuous, autonomous, reliable monitoring allowing for optimized maintenance with less production loss.



### APPLICATIONS

- Slurry (hydrotransport) Pipelines
- Tailings Pipelines
- Oil and Gas Pipelines
- Pump Housings and High Wear Components
- Condition-Based Maintenance (CBM)



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## WiTAP™ Material Loss (Wear) Monitoring

The system measures material thickness using wear sensors on the surface and embedded in the component wall and stores the readings in WiTAP™ “Motes”. The sensors are mounted at critical wear locations during asset manufacture or they may be retrofitted to assets in the field. The readings are transmitted to the Scanimetrix’ MoteScan™ Cloud via a gateway and internet access point. The web application running in the MoteScan™ Cloud processes the data and serves up a secure website where customers can view the data in graphical format, and export the data for further analysis. The MoteScan™ application can be programmed to notify key contacts by email, text message, and/or voice call if pre-set alarm thresholds are reached, to enable immediate attention, and avoid field failures and production losses.

### STANDARD SPECIFICATIONS

Sensor Operating Temperature Range	-40 °C to +150 °C
Electronics Operating Temperature Range	-40 °C to +85 °C
Pipe sizes	8” to 40” diameter
Number of Sensing Points per Location	8” ≤ pipe < 12”: max. 4 pts., 12” ≤ pipe < 14”: max. 6 pts., 14” ≤ pipe < 24”: max. 12 pts., 24” ≤ pipe ≤ 40”: max. 24 pts.
Measurement Resolution	1 mm (0.04”) after trigger point is reached
Available Trigger Points	Minimum: 4 mm (0.16”), Maximum: 40 mm (1.5”)
Maximum Battery Life	2 years of continuous operation ( <i>See Note 1</i> ) 50 million samples
Modes of Operation	Unaccompanied alarming, data logging and data transmission
Material Types Supported	Metals, Overlays, Urethane Liners, Fibreglass, Polycarbonates
Sensor Size	3/8” NPT
Wireless Sensing Module Size	9.5 cm x 5 cm x 3 cm (3.8” x 2.0” x 1.25”)
Operating Environment	Water and chemical resistant, built to IP67 standard
Mounting Method	Surface, threadolet or through-the-wall
Certifications	ASME 31.3, ASME B31.11, FCC and Industry Canada 900 MHz non licensed ISM band, ETSI 868 MHz non licensed SRD band

### OPTIONS

Certifications	Intrinsic Safety (Zone 0 or Class I, Division 1)
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Note 1: Battery is rated for 50 million samples or 2 year of operation, whichever occurs first.

All specifications subject to change without notice

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