i+weld PANDROL Partners in excellence

# SonicVizio-WS-S

## Track Measurement and Analysis

**Adding Value**

An ergonomic system inspecting the rails which can permit to analyse easily all the defect in a short time. Identify defects easily with intelligent software for efficient analysis.

Characteristics, metrics analysed, SonicVizio-WS-S is a lightweight system used in rail flaw detection on any type of track.

Equipped with a 5 angled probe 40/70/0TR/40/70°, it allows the detection and characterization of internal defects inside rail, weld and all components of the track. An encoding wheel system is installed on the frame to record all localization data.

This new generation of walking stick is designed to propose a Plug and Play experience and a smart software for beginners and confirmed user. Thanks to its smart software, the display is fully customisable according to the control specification and the user preference to show A-Scan, B-Scan, stripchart, number of channels.Improve your track longevity with SonicVizio-WS-S.

## TECHNICAL FEATURES

**Lightweight**

Lightweight design for easy handling and maneuverability on the railway, ensuring operator health during utilization.

**Prob Angle**

Equipped with a 5 angled probe (40/70/0TR/40/70°) for comprehensive defect detection and allow a complete analysis of the rail and welds.

**Localization Data Recording**

The encoding wheel and the GPS system enables precise location data to be recorded, facilitating track rehabilitation work after analysis.

**Plug and Play Experience**

Designed for seamless setup and operation, suitable for both beginners and experienced users.

**Longevity Enhancement**

Use SonicVizio-WS-Smart to improve the longevity of your tracks by prevent them from breaks. Allowing rail traffic to be made even safer by identifying defects in the rail.

**Multiple Application Field**

Use is applicable on Aluminothermic Weld and Flash Butt Weld, and it accepts all kind of track.

## ADVANTAGES

- Smart software allows full customization of the display to suit control specifications and user preferences, displaying A-Scan, B-Scan, strip chart, and number of channels.
- Can be used during traffic.
- Single man operation and light weight.
- No heavy maintenance and few consumable parts.
- Modular system permit to quicky change the probe.


## COMPONENTS

1. Telescopic handle
2. Water tank
3. Irrigation system
4. Probe
5. Encoder
6. Anti-derailment wheel

## SPECIFICATIONS

| Overview - UT Smart Walking Stick | |
|---|---|
| Weight | Less than 5 kg |
| Operating temperature | -10° to 50°C |
| L x W x H | 520 x 700-1140 x 200 mm |
| Tank capacity | 10L (approx. 2,5km) |
| Specifcity | Stick electrically isolated |

| Overview - UT Probes | |
|---|---|
| Number of angles of UT detection | 5 |
| Number of detection crystals | 6 |
| Specification | • Special anti wear system<br>• Exchangeable probes on customer request |
| Minimum wave length detection | 0,5 mm |
| Angles | 40°/ 70° / 0° TR / 40° |
| Frequency | 4MHz for 0° element<br>2,25MHz for -/+ 40° and -/+ 70° |
| Maximum speed | 6km/h |

## MEASUREMENT


Internal Cracks


Vertical Defect


Squat

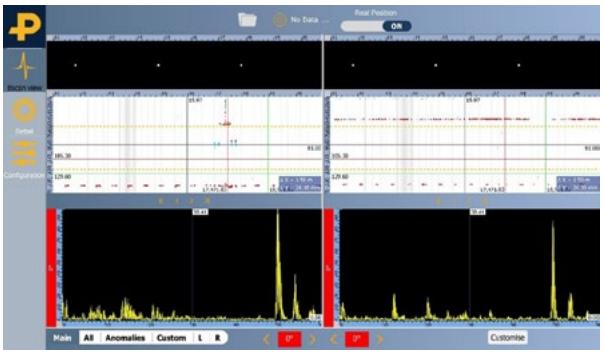

Shelling / Shaving

## SOFTWARE

The Pandrol Ultrasonic Testing Smart Software is the perfect tool for an easy in track inspection. Our Smart Software has been designed to make easier the Ultrasonic Testing of the rail. Engineered to be accessible for all levels - operators, technicians, engineers.

## FIELD INTERFACE

- Comprehensive Detection and Reporting: A-SCAN & B-SCAN displays, automatic flaw detection, defect location (KP and GPS), and a defects record list.
- Offers complete record data and automatic inspection reports, ensuring thorough documentation and analysis.
- Allows for data analysis both on-site and at the office.



## OFFICE INTERFACE

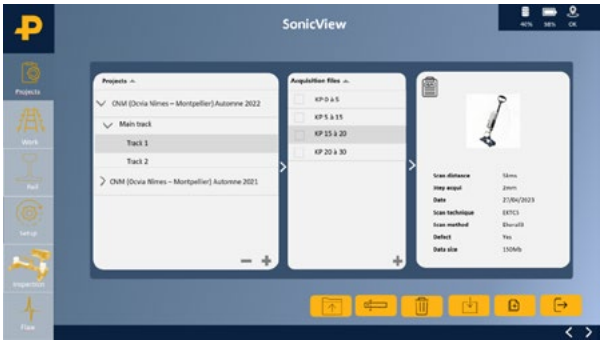
- Automatically detects defects, classifies them in a list with amplitude, dimensions, and position details.
- Enables the creation of geolocated events or comments on the track and defect sheets for detailed anomaly characterization.
- Post-inspection data analysis, including visualizing the entire inspection or just anomalies, creating new located anomalies, and assigning colour codes to each defect.

## REPORTS

**Pandrol SMART** is a new generation of software specially designed for the 8-channels UT device. Suitable for the walking stick in 5-channels mode, it includes all the features of a standard UT device plus a smart control interface for A-Scan and B-Scan data recording in real time.

During the control management of the records and the indexing of anomalies can be carried out manually, automatically or completely autonomously (thanks to the alarm gates system) according to the customer's criteria.

All the features expressed in 3.4.5 are available (Voltage, PRF, Filters, Gates and alarms, DAC/TCG, A-Scan/B-Scan display) for the creation and saving of UT configuration files or expertise operations.




## SPECIFICATION

### Measurement application fields

Multi-angle detection enables the identification of various types of rail defects, including head checks, corrugations, squats, skid spots, indentations, break-outs, and machining errors.

Our comprehensive system covers all these defect types, resulting in prolonged railway longevity without requiring significant operations and reducing the risk of accidents.

| Mesurements | |
|---|---|
| **Parameter** | **Criteria** |
| Connector | Lemo00 |
| Voltage | 5V |
| Ultrasound channels | 8 Ultrasonic channels - P/R mode and T/T- mode |
| Precision | 8 - 12 bits |
| Encoder inputs | 2 encoders - various I/O |
| OS Compatible | Windows |
| Power supply / Consumption | 5V - 400mA to 800mA / 4 W |
| L x W x H | 101 x 38.25 x 73.5mm |
| Weight | 350g |
| Support | Support plate / DIN rail (optional) |

| Tablet | |
|---|---|
| Display | 14'' |
| Protection | Rugged – IP 65 |
| Autonomy | 8 – 9 hours |

| UT Acquisition system | |
|---|---|
| UT smart box | 8 |
| Encoding sytem | 5000 pts / tr |
| Selector box | Angle selection |


The Pandrol SMARTRAIL-8M acquisition system acquires and processes 8 detection angles on the rail. Its computing power enables rapid accumulation of all the data needed to know the state of the track.

## ADDITIONAL INFORMATION

| Options | |
|---|---|
| 1 x Getac A140 Tablet | Included |
| Smart Software | Included |
| GPS and odometer | Included |

| Accessories | |
|---|---|
| Spare batteries | Available |

### Standard compliance

- EN 16729-1 and 3 : Requirements for ultrasonic inspection and evaluation principles and for identifying internal and surface rail defects.
- ISO 22232-1 and 2 : Characterization and verification of ultrasonic testing equipment – Flaw detector and probes.