vossloh

Turnouts and rails

Versatile deployment

Can also be used during short track possessions (fast off-railing)

Co-developed with Fraunhofer IKTS Dresden

Ultrasonic Rail Tester SoniQ Rail Explorer (SRE)

Technical Datasheet

SoniQ Rail Explorer (SRE):
Exact detection and location of rail defects

Developed in collaboration with Fraunhofer IKTS in Dresden, the ultrasonic rail tester Soniq Rail Explorer (SRE) detects internal irregularities resulting from track operations as well as rail base corrosion and volumetric defects. The data is displayed using B-scans and camera images, and transmitted directly to the office. The findings can be incorporated into digitalized process chains.

Benefits

/ Detects subsurface irregularities, volumetric defects in the rail head, web and base as per DIN EN 16729-1 as well as rail base corrosion
/ Easy to use
/ Ultrasonic system with 10 pulser channels
/ Multiple ultrasonic views including synchronized A-scans and B-scans
/ Rugged tablet PC
/ Camera *(optional)*
/ Tracking system to provide location information
/ Higher standard of information thanks to Augmented Reality and Artificial Intelligence *(optional)*

Applications

/ For rail network operators, rail infrastructure and maintenance service providers
/ For pinpointing defects, regular inspections on short track sections, switches, level crossings and railways stations
/ No interference with switching equipment
/ Can be used during short track possessions
/ Can be used by EN 1 inspectors or higher
/ Software supports different rail profiles
/ Based on all the applicable standards and technical regulations of the railway industry

Video

SoniQ Rail Explorer (SRE)
Technical Data

Device type

- manually guided ultrasonic rail tester device with B-scan technology
- rails, switches and crossings as per DIN EN 13674-2
- detection of internal rail defects in the base, web and head (both gauge corner and field side)

Inspection technology

- Roller Search Unit with 10 channels and 9 independent probes employing the pulse-echo method

Measuring range

- 0°, 4 MHz, 40° forwards and backwards, 2 MHz
- 70° center forwards and backwards, 2 MHz
- 70° satellite probes forwards and backwards for both the gauge corner and the rail's field side, 2 MHz

Analysis

- defect detection in accordance with DIN EN 16729-1
- detection sensitivity for internal and external rail defects guaranteed in accordance with RIL 821.2007A02

Optional extras

- images of the rail head surface taken during the inspection by an integrated camera
- image data linked to ultrasonic data and location
- PCUS® pro Single (compact electronics for manual testing) to connect to single, manually-guided probes (IE/SE) and use of the same software (A-scan)

Optional extras currently being developed

- the training of algorithms to classify and aid in detecting indicators (pattern recognition) when provided with a sufficient amount of consistent data
- indicators inside the rail displayed in a 3D volumetric image of the rail and visualized as a holographic tomogram (Augmented Reality or AR)
- an upgrade that allows simultaneous inspection of left and right rails in a single operation

Benefits

- no data lost if the power supply is suddenly interrupted
- PDF export
- flexible software (PCUS® pro from Fraunhofer IKTS lab) for all commonly used Windows systems

- low center of gravity provides stability
- fold-out, height-adjustable side stand
- end stands front and back
- lateral outrigger *(optionally available)*

- inspection results displayed in real time while the data is being recorded
- indicators displayed together with their dimensions and positions
- input of route-specific parameters
- safety rating: device – IP54; electronics and tablet – IP65

- identifying marks, their positions and any comments can be added, saved and exported
- powerful, modular electronics (PCUS® pro Multi from Fraunhofer IKTS)
- USB 2.0 high speed

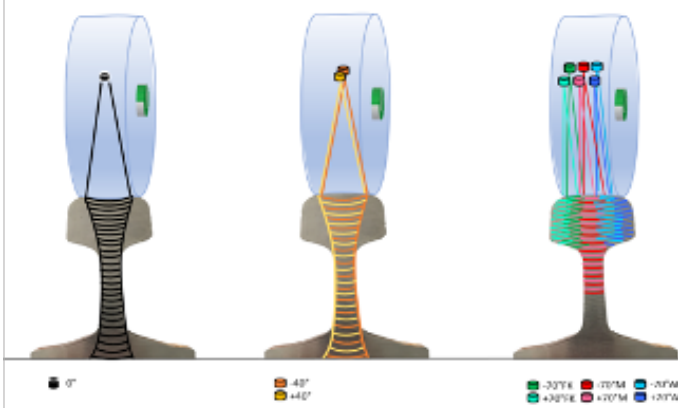
- subsequent adjustments of all parameters not related to recording data (incl. visualizations, gates)
- reduction of downtime thanks to remote diagnosis (maintenance access)

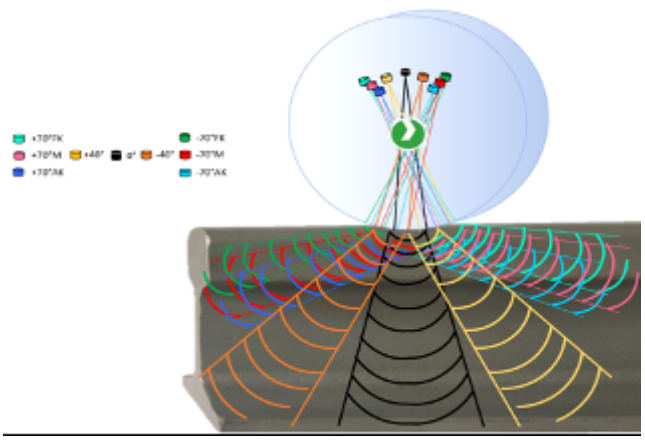
- annual service and calibration by the manufacturer in accordance with DIN EN 12668-1
- CE-certified
- EMC-tested as per DIN EN 50121-1:2015 (DIN EN 50121-3-2:2017)

Dimensions / weight

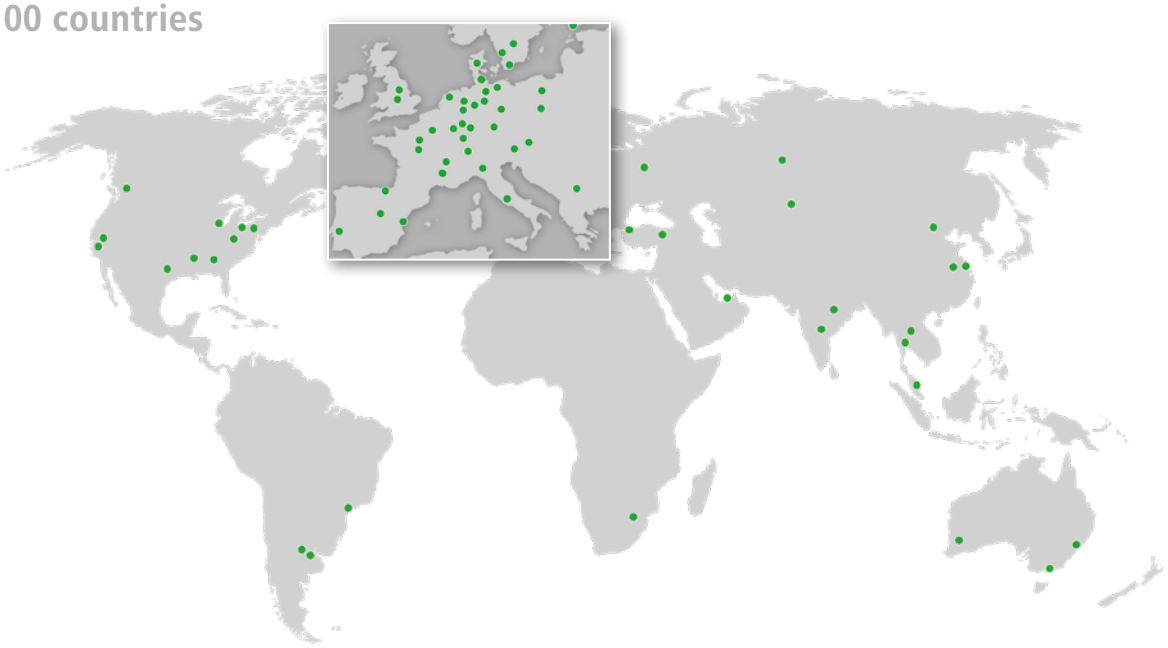
full length with the handle up (ready for use)	870 mm
full length with handle folded down	approx. 1.100 mm
width at bottom across feet	235 mm
width at the knurled screws	300 mm
width of the carbon fiber housing	approx. 200 mm
height to top of handle when standing on feet (ready for use)	approx. 930 mm
weight	20 kg, without 4 liters of couplant water

SRE test wheel concept





Global expertise
in over 100 countries



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03/21