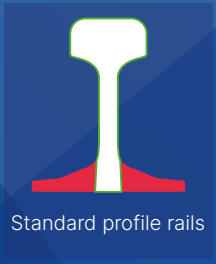
UDS2-73 SL &TRAM

Rails with grooves



Standard profile rails

Ultrasonic dual-rail flaw detector UDS2-73 SL is made for ultrasonic inspection of:
- standard profile rails
- tram rails

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The flaw detector ensures the detection of internal and sub-surface defects in accordance with AREMA, IRS 70712:2018 (UIC 712 R), EN16729-1.

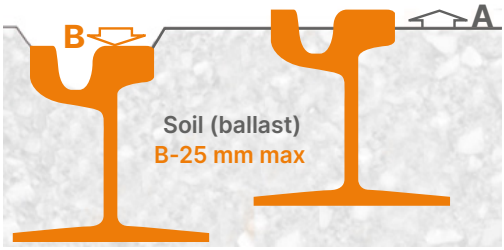
GENERAL TECHNICAL FEATURES OF UDS2-73 SL FLAW DETECTOR

- The full rail inspection is carried out in one pass in one direction;
- The flaw detector ensures inspection of at least every .1 in. (2.5 mm) of the rail at the speed of scanning up to 3,1 m/h (5 km/h);
- The flaw detector ensures inspection results data display in the forms of A-Scan, multi-A-Scan, B-Scan for all channels;
- During the inspection, test results data display in real time is shown in the form of B-Scan;
- The flaw detector allows to record and save information (operator's name, line, direction, track number, left/right position, initial track coordinate, date, time, final track coordinate);
- The flaw detector allows to save screenshots during the inspection (PrintScreen);
- Saving of inspection results in the form of data array (B-Scan) is implemented in the internal memory of the device;
- USB-drive is used for inspection results data transfer to a PC;

UDS2-73 SL is made of light, solid materials which ensure minimum weight at maximum strength of the unit structure.

The flaw detector allows to perform quality ultrasonic inspection of tram rail areas with drowned in soil rails (lower than ballast level) under the condition of enough cleaned groove of the inspected tram rail.

The flaw detector ensures high-quality ultrasonic inspection of the whole rail profile except for the rail foot flanges and separate tram rail groove areas, with scanning speed up to 3,1 m/h (5km/h) by echo impulse and echo-image techniques.



- The flaw detector allows to save track coordinate (Encoder) and global coordinate (GPS) of each inspection spot;
- The flaw detector provides inspection results review with the possibility of measuring conditional defect dimensions;
- There is a possibility to set markers (for instance, “Bridge”, “Crossroad”, “Bolt hole”, etc.);
- During the inspection the flaw detector signals about the presence of the defects: sound and light alarms, visual indication of set values of inspection sensitivity, defect coordinates, coordinates of the current track.
- The time of continuous operation of the flaw detector from fully charged makes at least 8 hours;
- The presence of 10-inch high-resolution liquid crystal screen ensures quality inspection results display in the form of B-Scan with color range;
- During the operation the flaw detector is resistant to the following climatic factors: the range of temperature of the environment is -22°F - 131 °F (-30°C - 50°C) and humidity 95%.

UDS2-73 SL FLAW DETECTOR DESIGN FEATURES

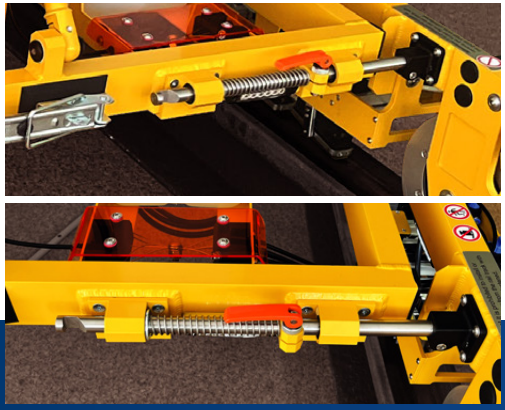
- Ergonomic, lightweight and solid structure of body of the flaw detector ensures the possibility of carrying out railway track inspection with inter-rail distance in the range of 37,40 in - 65,98 in (950-1676 mm) and adaptation to any regional norms regarding gauge tolerances.

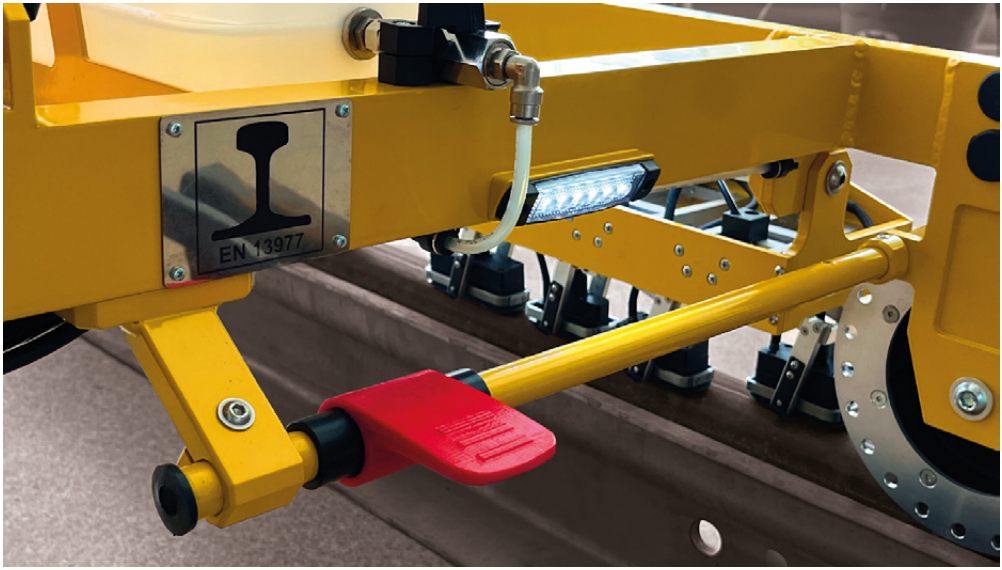
• The position of electronic management and visualization unit (monitor) can be adjusted in three axis. Electronic unit has protection level IP65 in accordance with EN60529. All the electronic components of the flaw detector are protected from the atmospheric precipitations.

• The flaw detector is equipped with adaptive suspension structure of each probe unit.

• Safe passage of railway crossings could be provided by two mechanisms of quick lifting and lowering of all ultrasonic probe units in scanners (on the left and right from handles).

• UDS2-73 is equipped with the mechanism for track gauge monitoring which ensures constant position of scanners relative to the rail head and allows to perform quality ultrasonic inspection on worn railway track areas.

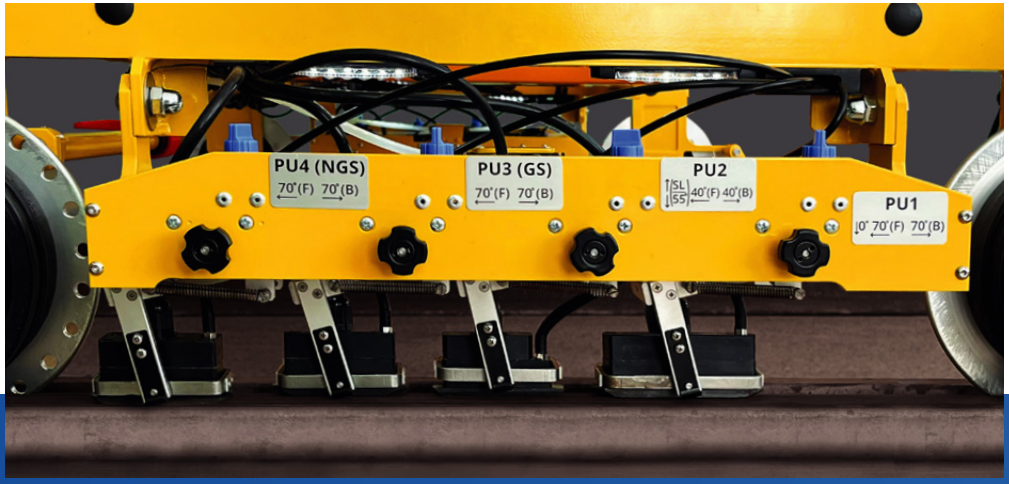




• During the inspection operator can use simple foot brake which allows to quickly fix the flaw detector in stable position.

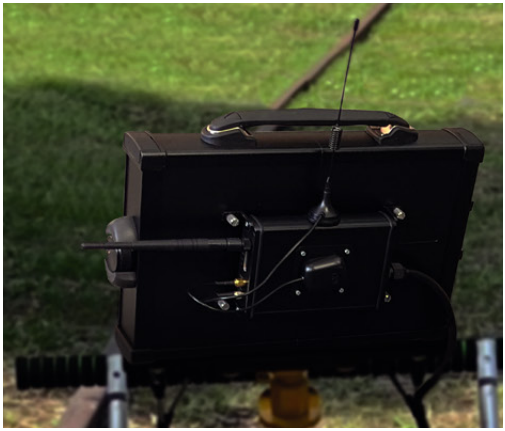
• Structurally each ultrasonic probe unit of the flaw detector is equipped with:

- Individual adjustment of the probe unit transverse displacement relative to the rail axis;
- Individual adjustment of the contact fluid flow;
- Individual probe unit suspension which provides free vertical movement of the probe unit.



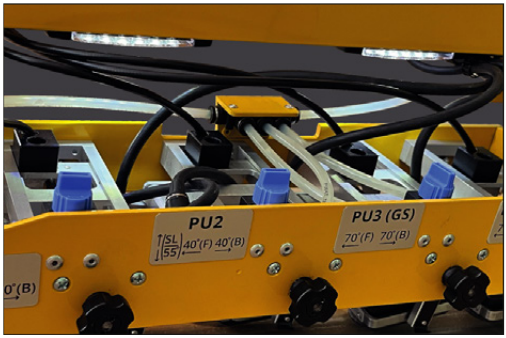
ADDITIONAL OPTIONS

- Except for the track coordinate, GNNS/GPS module allows to record geolocation coordinate which facilitates the detection of the defected railway track area during post-processing. The global coordinate is automatically integrated into the software, displayed on the monitor of the flaw detector and corresponds to all types of reports.

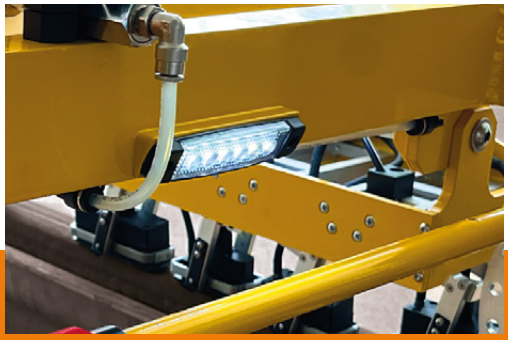


The flaw detector can be equipped with main directional lighting on a folding bar (lighting bar). It is intended for long-distance lighting within the railroad infrastructure.

Probe unit PU5 is used for tram rails inspection. PU5 has smaller dimension as well as smaller ultrasonic probes (straight beam dual-element probe (0°) 4,0 MHz Ø.39 in (10 mm) - 1 pc; angle beam single-element probe (40°), 2 MHz - 2 pcs).
During tram rails inspection PU5 is installed instead of PU2.



- Additionally, there is a possibility of installing front lighting and operator walking zone lighting
(front and rear lights).



EXAMPLES OF SOME REPORTS

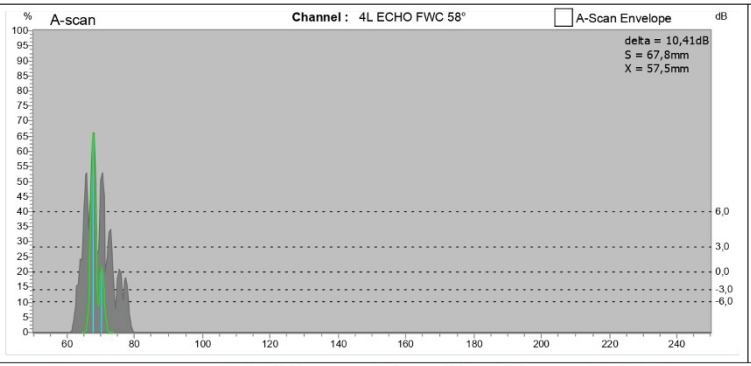
A-scan instrument report

Date/Time:08.28.2023:10.02	**Location defect:**
SRT serial number: Sr.No. - 2308337	**Probe type:**0°
Operator: User_#0	**GPS:** 50° 28.6'
Division: Division #0	**Flaw Code:**238 Web, diagonal cracks not at hole.
Block Section: Block Section #0	**Peak details:**
Line: Up	**Classification of defect:**235
Current Position:0Km 0m	**Rail/Weld:**2
Start Position:0Km 0m	**Rail/Weld No:**25
Rail:RH	**Previous Classification:**135
Rolling mark:5236	

EXAMPLES OF SOME POST-PROCESSING REPORTS USING THE **"RAILINSPECTOR"** PROGRAM

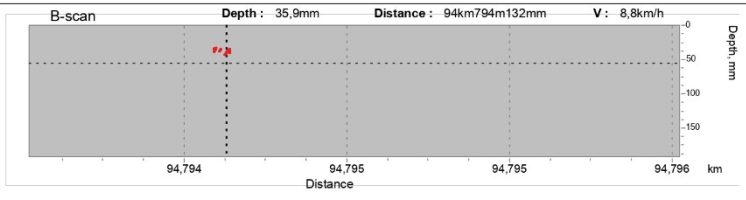
ULTRASONIC BSCAN TEST REPORT
UDS2-7X RAIL FLAW DETECTOR #_____

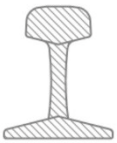
B-Scan Filename : 20A20213157, Division #0, Baliseh-Yerkoy, Start: 093km446m End: 096km974m



Date/Time : 20:10:2023 21:31

Range (mm) :	200
Delay (mm) :	50
Probe Zero (mm) :	5,5
Gain (dB) :	59
Alarm Level (%) :	20
Angle (°) :	58
Search Level (%) :	10
Logic :	+
Sound Velocity (m/s) :	3230
TGC :	-





UDS2-73 SL &TRAM

Rails with grooves

Standard profile rails

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UDS2-77

Ultrasonic single rail flaw detector
Complies with: EN 16729

You can choose the search system type: Roller search unit or Slide probe unit

OKOSCAN 73HS

High-Speed Ultrasonic Testing System For Track Rails

Compliant with:
AREMA
EN 16729-1
EN 13977