

DIVA 700-T

Digital track geometry measuring trolley

DIVA 700-T trolley is an entirely digital hand operated track geometry measuring equipment. Its design is light, stable and insulated. The mechanical design of the device is prepared to hold an android device fix during the measurements. The measuring results are forwarded via Bluetooth connection.

DIVA 700-T measures the following parameters: track gauge (on track and switch as well) and superelevation (cant). The results can be read out on the display on the Android device.



DIVA 700-T on the rails

It is designed to have 60 mm distance from the top of the rail (TOR) within the rails to avoid contact between its middle parts and the check rails (EU regulation 1299/2014/EU). The side contact points find the guiding surface of the rail 14 mm below the TOR to measure track gauge.

The equipment operates with one AA Li-ion rechargeable battery. Thanks to the low consumption of the equipment, the operational time is 10 hours. The battery can be changed quickly, the operating time can be extended simply. Due to its digital features, DIVA 700-T is an easy-to-use solution with long life span and very low maintenance requirement.

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Technical parameters¹

Measuring parameters

Track gauge range (track and switch)	as demanded
Superelevation (cant, level)	± 225 mm

Dimensions

Sizes	250x120x1600 mm
Weight	6 kg

Accuracy and resolution

Gauge accuracy	±0,25 mm
Superelevation accuracy	± 0,3 mm
Resolution of electronic sensors	0,1 mm (0,05 mm is also possible)

Features

Insulation resistance	10 MOhm
Operational temperature	-30°C...+50°C
Storing and transportation temperature	-30°C...+50°C
Operational time	10 hours with one charge
Protection	IP67

Accessories

Li-ion batteries	Battery charger (~220..240 V, 50 Hz)
Calibration certificate	Declaration of conformity
User manual	Transport bag
Android device	Android software

¹ Special customer demand also can be met upon separated agreement.

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Measuring software

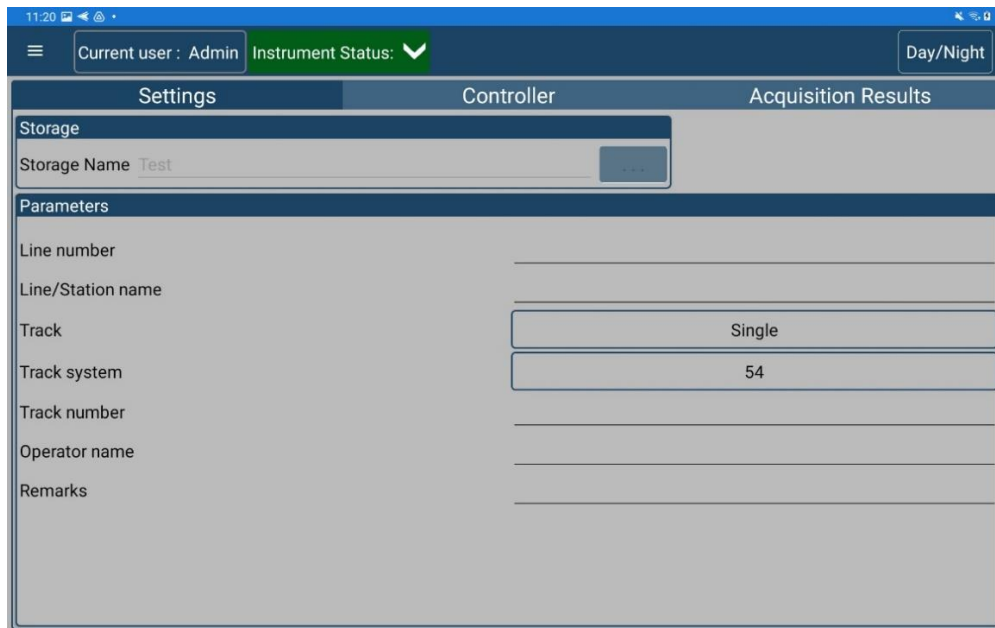
Android application (runs on phone and tablet) receives the measured values of the measuring device. Phone and tablet can be used to save the required parameters and export the measurements to '.csv' or another format, which can be imported to Excel on the PC.

Android software:

On the opening screen an existing project can be opened or new project can be saved. Creating new project, the following parameters can be entered to identify the measurement:

- Name of the measurement;
- Line number;
- Name of the station or line;
- Track system;
- Type number;
- Name of the operator;
- Remarks.

This list can be modified based on client's demand.



Once the parameters are added and the measurement started the user can read the incoming data on the top of the screen. By clicking on "Add New Point" a new measurement point can be created (in form of a line) belonging to the opened project. Once the measuring device is in position, by tapping the blue "NaN" buttons of a measurement point, the actual values can be saved to that measurement point. The order of the measurement points can be modified by the arrows pointing up and down. More information (e.g. GPS) and

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actual saved values can be displayed by clicking on the “Info” button. Once the measurement is locked, it cannot be modified accidentally. In order to delete a measurement point, the trash bin button can be pressed.

The screenshot shows the DIVA 700-T software interface. At the top, it displays the current user as 'Admin' and the instrument status as 'Instrument Status: [dropdown]'. There is a 'Day/Night' toggle button. The main display is divided into three sections: 'Settings' (Track Gauge: 1428.6 mm), 'Controller' (Check Rail Gauge: 1416.6 mm), and 'Acquisition Results' (Cant: 12.1 mm). Below these is a table of measurements with columns for Title, Track Gauge, Check Rail Gauge, and Cant. The table contains five rows, with the fourth row (Measurement 4) highlighted in orange. Each row has a set of control buttons: up/down arrows, an info icon, a lock icon, and a trash bin icon. At the bottom, there are three buttons: 'Add New Point', 'Clear All Points', and 'Finish Measurement'.

Title	Track Gauge	Check Rail Gauge	Cant	Controls
Measurement 1.	1440.5 mm	1428.5 mm	8.6 mm	↑ ↓ ⓘ 🔒 🗑️
Measurement 2.	1427 mm	1415 mm	11.9 mm	↑ ↓ ⓘ 🔒 🗑️
Measurement 3.	1413.8 mm	1401.8 mm	11.9 mm	↑ ↓ ⓘ 🔒 🗑️
Measurement 4.	1475.2 mm	1416.6 mm	11.9 mm	↑ ↓ ⓘ 🔒 🗑️
Enter title...	NaN mm	NaN mm	NaN mm	↑ ↓ ⓘ 🔒 🗑️

Other functions:

- Day/Night mode;
- Clearing all the measurements;
- Changing recorded measurements (name, values, position);
- Checking measuring device status (status of the connection, battery level, etc.);
- Program alerts the user in case of low battery level;
- Measurements can be continued.

The screenshot shows the DIVA 700-T software interface in a list view. It displays the current user as 'Admin' and the instrument status as 'Instrument Status: [dropdown]'. There is a 'Day/Night' toggle button. The main display is divided into three sections: 'Settings', 'Controller', and 'Acquisition Results'. Below these is a table of measurements with columns for Title, Track Gauge, Check Rail Gauge, and Cant. The table contains five rows, with the fourth row (Measurement 4) highlighted in orange. At the bottom, there are three buttons: 'Add New Point', 'Clear All Points', and 'Finish Measurement'.

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Measurement 3.	1413.8 mm	1401.8 mm	11.9 mm
Measurement 4.	1475.2 mm	1416.6 mm	11.9 mm
	NaN mm	NaN mm	NaN mm

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On the "Acquisition Results" tab the recorded measurements are listed. These measurements can be exported in '.csv' format. The measurements can be shared via mail or other android applications (Gmail, Outlook, Drive).

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