

APT-WFM - WHEEL FLANGE MEASUREMENT

DESCRIPTION

The WFM (Wheel Flange Measurement) is specifically developed for the measurement of wheel flange thickness and height on heavy rail and light rail vehicles (such as tram and metro).

Using state of the art laser technology, the WFM system provides a reliable, fast and affordable technology for the measurement of the flange thickness and minimum flange height verification.

TECHNOLOGY

Control Box

An industrial enclosure or a street cabinet contains the data acquisition module and an industrial computing unit. The box is installed in the vicinity of the track up to a distance of 150 m.



The control box is of water and wind proof construction.

All cabling runs directly from the sensors to this box.

The control box is hooked up to the power grid and connected to the internet (data).

Optionally, a wireless data connection can be configured.

Vehicle identification

Vehicle identification is based on readings from existing vehicle identification loops or RFID tags.



The measurements are linked with the vehicle identification so that they are assigned to a specific wheel.

Optionally a camera can be installed. The camera only provides images when a vehicle is present.

Contact

APT

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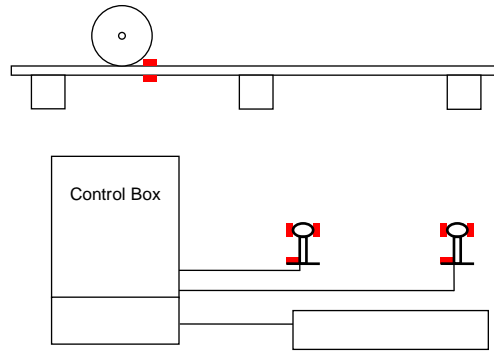
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Sensor Installation

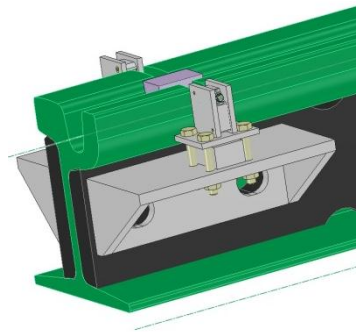
The sensors are attached to the rail using fishplates and bolts.

A hole is made in the railhead to allow for thickness measurement at the normalised measurement height.



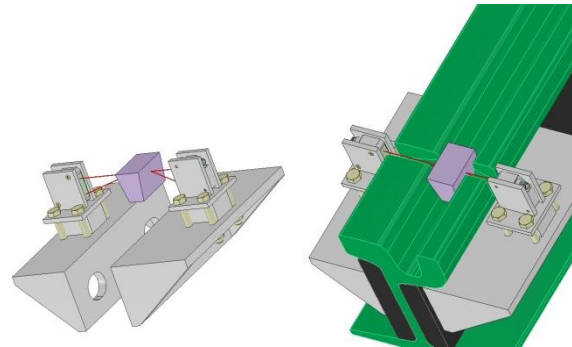
Data acquisition

The system uses four sensitive laser distance sensors: one on each side of each rail.



Data Processing

Data processing is done instantly for each individual wheel. Wheel flange thickness is measured and flanges with a reduced height are detected.



SOFTWARE

The standard software allows the viewing of the measurement date and time, the vehicle identity and speed, the wheel flange thickness and detected flanges with a reduced height.

The data are accessible with a browser through a standard internet connection (password-protected website).

Email or text message alerts can be configured and sent automatically to the maintenance crew/responsible.

The information can be transmitted to a remote location for integration into a maintenance vehicle database.

An automated back-up is stored on the APT servers.

Wheel Flange Monitoring APT Track Products and Measurement Devices

[Download complete table](#)

Start - End	Pos	VehID	Speed	Flange width	Flange height
2012-02-23 08:41:37	51.248205N	7214 Herm	5.3	18.4	
2012-02-23 08:41:43	4.418852E	7255 Herm	2.8	16.8	
2012-02-23 07:38:46	51.248205N	7144 PCC	8.5	15.4	
2012-02-23 07:38:50	4.418852E	7062 PCC	4.4	20.2	
2012-02-23 06:16:30	51.248205N	7221 Herm	3.9	12.4	
2012-02-23 06:16:26	4.418852E	7206 Herm	6.7	14.2	
2012-02-23 06:12:18	51.248205N	7042 PCC	5.1	14.3	
2012-02-23 06:12:23	4.418852E				
2012-02-23 06:09:09	51.248205N				
2012-02-23 06:09:11	4.418852E				