

**PROTRAN**  
TECHNOLOGY

A Harsco Rail Company

## CATENARY MEASUREMENT SYSTEM

*Automated Catenary Parameter Inspection*

### System Features:

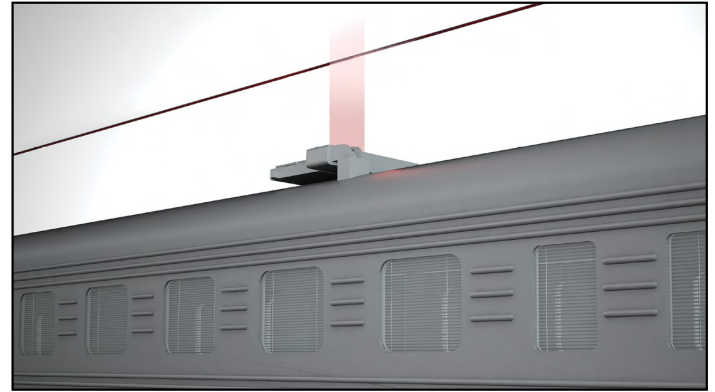
- Current collector monitoring
- Data visualization through video monitoring, thermal imaging, and UV diagnostics for components and assemblies
- All-weather capable
- Automatic rating system of operational condition
- Includes diagnostics for tensile load and catenary supports



# CATENARY MEASUREMENT SYSTEM

## *Automated Catenary Parameter Inspection*

Protran Technology's Catenary Inspection System provides analytics and diagnostics to keep catenary systems working at their full potential. The operation is fully enclosed and all-weather capable, allowing for inspections in any conditions. Feedback comes from video monitoring, thermal imaging, and UV diagnostics. The system logs each deviation, its location, operator's marks, and sampling retrievals. A rating of the catenary system's technical condition is automatically generated from the data acquired.



### Specifications:

Parameter	Value
Current collector pressing force	0-400 N
Catenary DC voltage	2.2-4 kV
Catenary 50 Hz AC voltage	19-29 kV
Body lateral displacements	0-120 mm
Superelevation of main clamp rods with respect to working contact wire	100-600 mm
Contact wire height	5.3 - 7 m
Stagger and rise (for number of wires 1-4)	± 700 mm
Heightening or lowering of the contact wire on trolley frogs	± 120 mm
Additional fixture vertical position	According to TsE-868 (PUTEKS)
Location of departing branches	± 250 mm
Contact wire wear	Cross-section 100 mm <sup>2</sup>

### Description:

The system measures the catenary components and full assemblies, as well as tensile load on the current collector and catenary support conditions. In the course of inspection vehicle travel, the system detects the catenary supports and determines the distance from them to the track centreline and spans between them. The impact on the collector is logged in the range of 0 to 50 g, with  $\pm 0.5$  g error, while pressing against the contact wire with a force in the range of 0 to 200 N, and an error not exceeding  $\pm 5$  N. Further it logs disengagement from the wire. Positions of clamps and branches departing from the shoe's surface in the points  $\pm 600$  mm from its axis are also detected.

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1960 Old Cuthbert Road,  
Cherry Hill, NJ 08034  
[www.protrantechnology.com](http://www.protrantechnology.com)  
856-779-7795