

TECHNICAL INSTRUCTION

TI 133

Issue 2

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NETWORK RAIL - SIGNAL ENGINEERING

New Design of Toe and Supplementary Rail Position Sensors (LVDTs)

Relevant Standards: NR/SMS/PC51, NR/SMTH/Part4/PH01, NR/SMTH/Part4/PH02, NR/L2/SIG11400

Purpose

This Technical Instruction is required to raise awareness of the new design of Toe and Supplementary Rail Position Sensors (LVDTs) that have recently been approved by Network Rail. Additionally, good practice advice is provided to aid staff during replacement work when installing the new design.

Scope

This TI applies to the HPSS only. The advice applies to staff responsible for installing and/or maintaining Toe and Supplementary Rail Position Sensors.

Background

An investigation into Rail Position Sensor reliability has resulted in a new design of Toe and Supplementary Sensors being approved. The fundamental change is with the manufacturing process resulting in the new design being more resilient to greater levels of shock and vibration.

Changes in issue 2

The following changes have been made :-

- The availability of new design Toe and Supplementary Rail Positions Sensors
- The availability of new design Supplementary Sensor Bracket Mounting
- Ordering details for the recently approved Toe and Supplementary Rail Positions Sensors
- Ordering details for the recently approved Supplementary Sensor Bracket Mounting
- Diagrams to highlight the differences between the old and new products
- A Good Practice guide for when changing Rail Position Sensors has been included

Products

Toe and Supplementary Rail Position Sensors (LVDTs)

All new designs of Sensor are interchangeable with the existing design on a like for like basis e.g. an existing RT60 Insulated Toe Sensor can be replaced with the same 'new' design. Similarly the 'new' LVDT design is fully compatible with all existing ECU's.

Supplementary Sensor Bracket Mounting

The Supplementary Sensor Mounting Bracket should be the 5mm thick design which is secured using 4 M12 screws. Some layouts are fitted with a 3mm thick, 2 bolt bracket design, which is now superseded. If Supplementary Sensors are being replaced and the system is fitted with the superseded 3mm design, these shall be replaced with the 5mm thick design. Information on how to order the brackets is provided later in a table along with new Sensor details.

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Documents

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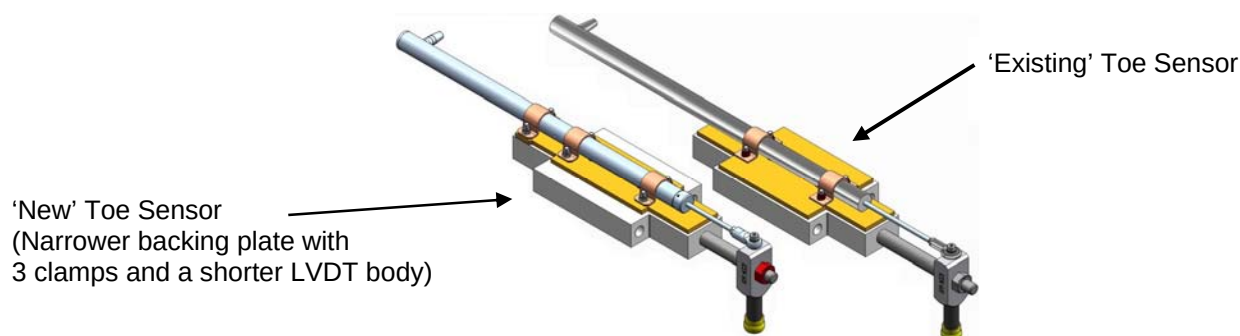
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This table provides information to assist when ordering replacement sensors and brackets.

<u>Product Description</u>	<u>Spares Kit No.</u>	<u>PADS No. (Spares Kit)</u>
Un-Insulated		
Toe Extend Sensor, RT60, Un-Insulated	4015	086/032909
Toe Retract Sensor, RT60, Un-Insulated	4016	086/032908
Toe Extend Sensor, UIC54, Un-Insulated	4018	086/035173
Toe Retract Sensor, UIC54, Un-Insulated	4019	086/035174
Supplementary Sensor, UIC54 / RT60, Left Hand, Un-Insulated	4031	086/032907
Supplementary Sensor, UIC54 / RT60, Right Hand, Un-Insulated	4032	086/032906
Insulated		
Toe Extend Sensor, RT60, Insulated	4168	086/035346
Toe Retract Sensor, RT60, Insulated	4169	086/035347
Toe Extend Sensor, UIC54, Insulated	4170	086/035348
Toe Retract Sensor, UIC54, Insulated	4171	086/035349
Supplementary Sensor, UIC54 / RT60, Left Hand, Insulated	4172	086/035350
Supplementary Sensor, UIC54 / RT60, Right Hand, Insulated	4173	086/035351
Un-Insulated / Insulated		
Supplementary Sensor Mounting Bracket	10157	086/035344

Illustrations

The following illustrations provide detail of the new Sensor design and difference between the superseded 3mm Supplementary bracket and the preferred 5mm design.



Note: The only design change to Supplementary Sensors is use of the new (shorter) LVDT.