

# VOID METER

The Product Innovation Ltd Void Meter is an electronic position sensor designed specifically for the Rail 'Intelligent Infrastructure' environment. When installed it measures the vertical movement of a sleeper or rail as a train passes over. It outputs a 4 - 20mA signal in real time. 'Smart Maintenance' can then be employed wherever the movement is more than a preset value. The original prototype has been on trial at Network Rail's Witham site since July 2014.

## Void Meter Specification

- Dimensions: (See Diagrams on following page.)  
Height: 360mm (Fully extended)  
Width: 110mm  
Depth: 115mm
- Weight: 1.5Kg (excluding cable)
- Total Movement of push rod: 115mm
- Active measurement distance: 100mm (See Note 1)
- Resolution: 0.5mm
- Frequency of measurement: 90Hz
- Distance between fixing holes: 80mm.
- Fixing Hole Diameter: 8mm
- Power Supply: 24VDC (See note 3)
- Cable  
Type: 3 core PVC covered.  
Length: 10 Metres (Or to order)
- Output: 4 - 20mA to ground.
- Temperature range: -40C to +80C
- Patents pending.

### Notes

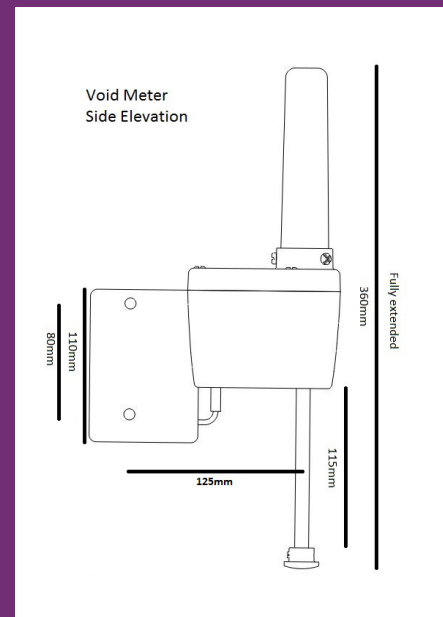
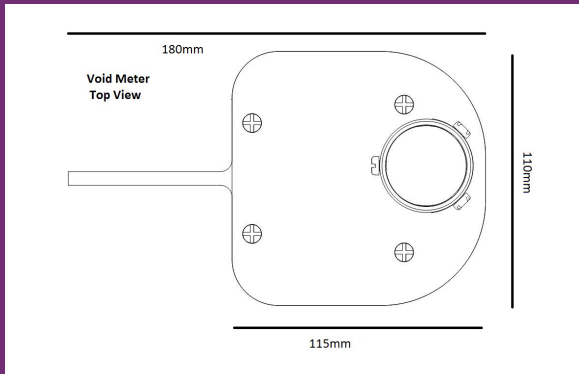
1. The last 15mm of movement as the shaft is pushed in is 'dead space'. The current output (4mA) will not alter if the shaft is pushed further in from this point on.
2. The rest position of the push rod should be such that there is space for 'heave' in the event that the sleeper rises as its opposite end falls.
3. Lower DC input voltage is possible depending on the input impedance of the current sensing equipment.



[For more information click here](#)

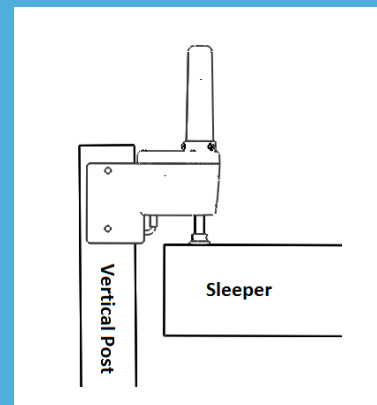
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## Dimensions



## Installation Instructions

- The Void Meter should be fastened to a vertical post that is fixed relative to the ground.
- The sprung push rod should be vertical with the end cap resting on the top surface of a sleeper. (See Note 2)
- The rest position of the push rod should be compressed such that at least 15mm of the metal of the shaft is visible when the end cap is pressing on the sleeper. (See Note 1)
- The electrical connections are as follows:  
Red = 24VDC  
Green = 0V  
Blue = 4 - 20mA output. (Connect through current sensor to Ground)



[For more information click here](#)



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