



SPECIFICATIONS FOR DIGITAL SPEEDOMETER

1.0 SCOPE

This specification covers the requirements of digital speedometer to be installed in Oscillograph car (Railway vehicle).

2.0 SERVICE CONDITIONS

The equipment shall be sturdy and suitable for the following service conditions normally to be met in service.

- Ambient -5 to +55 deg celcius
- Train speed 160 Kmph
- Humidity upto 98% during rainy season
- Altitude Max 1200 meter above sea level
- Atmosphere Extremely dusty and desert terrain in certain areas. The dust concentration in air may reach at high value of 1.6 mg/cubic meter. Very dusty atmosphere with fog, cast iron dust of brake block shoe, flying ballast etc.
- Rainfall very heavy in certain areas.
- Coastal Area the equipment shall be designed to work in humidity salt laden and corrosive atmosphere. The maximum values of the condition shall be as under
 - maximum Ph value 8.5
 - Sulphate 7 mg/litre
 - Max concentration of chlorine 6 mg/litre
 - Max. conductivity 130 micro siemens/cm
- Vibration The equipment, system and their mounting arrangement shall be designed to withstand satisfactorily the vibration and shocks encountered in service as specified below.

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Sinusoidal form of vibration, the frequency f lies between 1 Hz and 100 Hz and their amplitude 'a' expressed in mm is given as a function of 'f' by the equation

$a = 25/f$ for values of f between 1 Hz and 10 Hz

$a = 250/f^2$ for values of f between 10 Hz and 100 Hz

3.0 TECHNICAL REQUIREMENTS

System should generally be consist of following three modules :-

1. Wheel pick up device
2. Control unit
3. Display unit.

3.1 WHEEL PICK UP DEVICE

- i) It should be compatible with IR-20 axle box design, details of which can be collected from RCF.
- ii) System should be self enclosed to prevent ingress of dust and rain.

3.2 CONTROL UNIT

- i) Operating voltage 200V AC & 12V DC.
- ii) Speed range 0-250 Kmph.
- iii) Least count: 1 Kmph.
- iv) Control unit should have odometers.
- v) Unit should have arrangement for adjustment of speed from new to fully worn out wheel diameter measurement.

3.3 Display Unit

- i) Display should be 7 segment bright red LED.
- ii) Letter size : 12mm.

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4.0 GUARANTEE

The equipment shall be gauranteed for satisfactory performance for a period of 18 months from the date of commissioning or 24 months from the date of supply whichever is earlier.

5.0 MAINTENANCE MANUAL

Maintenance manuals for installation and maintenance of speedometer shall also be supplied. The manual will explain the working of the speedometer and precautions to be taken during use.

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