

Testo is associated with Indian Railways & Metro Rail for Safety & Comfort.



Indian railways is the fourth largest railway network in the world by size. With more than 20,000 passenger trains daily, covering more than 7,000 stations across nation the Indian railways is the lifeline of the country. Of the total route length 57.91% of the routes are electrified with 25 kV 50 Hz AC electric traction while 33% of them are double or multi-tracked. A facility of this high magnitude and dimension demands scrupulous attention in governing, combined with lot of maintenance and inspections. As a necessary consequence, regular testing and measurement of physicals, parameters in the railway sector becomes priority. Be it the mechanical components like the engine radiators or the entire VAC system of the rail coaches & station facilities every aspect must be thoroughly monitored. Instruments from Testo play a very important role in the T & M processes of the railways.

Crucial areas of Application

There are several challenges in the overall operation of the sector which always requires address. The authorities and officials are keen to implement systems that ensure efficiency and reduce downtime of any sort. Testo already has provided instruments for multiple application areas in railways.

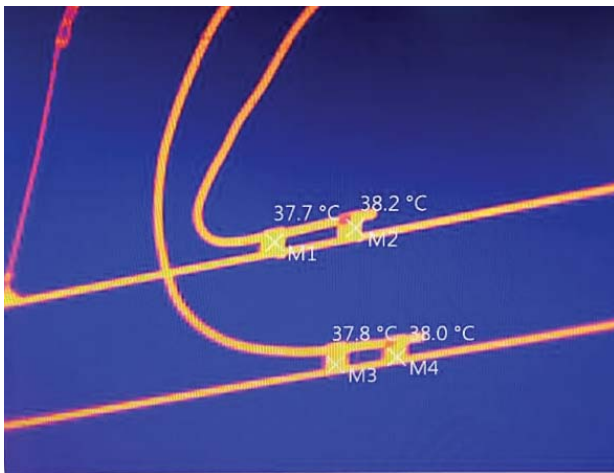
Predictive & Preventive maintenance

Thermal Inspection is the ideal solution for all predictive inspections. For instance, in electrical panels, overhead traction lines, TSS (Traction sub-stations), Rail car sheds, Electric loco sheds (ELS), Railway workshops, Rail coach factories, Rail wheel factories and other locations it is very difficult to find any defects or faults via any visual examination, also the observation area is too large sometimes.

Testo Smart Thermal Imagers are the best suited products available to perform thermal inspection wherein an entire area of concern is scanned, and the thermal profile can be studied to identify any thermal anomalies. Defected area always demonstrates higher or lower temperature as compared to the other surface, enabling the observer to determine hot or cold spots and take corrective actions to save catastrophic failures. This method is also used for predictive maintenance of various electrical circuit or equipment in railway yards, like indicating loose joints, overloads in circuits and thus ensures electrical & fire safety audit compliance. Complete troubleshooting of the electrical components can be carried out with testo Thermal Imagers.

Testo has provided multiple models based on the applications & requirements such as testo 872, testo 875 1i, testo 875 2i and testo 882, to Indian Railways and continues to answer other applications as well.

Testo has recently proposed testo 890, its high end thermal camera for online monitoring of traction lines via thermal inspection and scanning.



Similarly, these products can also be used in Metro Rail Corporations for OHE Traction lines thermal inspections and coaching depts in metro car sheds.

Condition Monitoring

Being such a vast sector of the Indian infrastructure, railway entails several mechanical and electrical systems to guarantee smooth, safe and steady governance of the sector. These systems and components are continuously under running state and need to be regularly monitored for any defects, under performance or excessive load,

that can lead to the failure of the component or cause accidents. Additionally, during operation there are chances of excessive sound emissions from rolling stock, rail engines, traction AC/DC motors, blowers, fans, air compressor and other mechanical components. Also, the speed of so many rotating components is a critical aspect & it is necessary to measure the rotational speed (RPM) in railway engines and other rotating parts.

Testo provides infrared thermometers also called as IR guns for the spot temperature measurement of the working machine. Sound level meters testo 815 & testo 816-1 are used by the rail authorities to measure the level of sound generated from the operational components & determine whether an employee needs special hearing protection or whether the existing sound level is reasonable and not injurious. To determine the speed of the rotating parts RPM Meter testo 465 are used to measure the rotational speed (RPM) in railway engines and other areas of application.



Climate Data Monitoring & Comfort

Climate monitoring is yet another aspect that is very railways. The most important parameters include all HVAC measurement such as temperature, humidity and CO₂ level in coaches along with air flow and velocity measurement in the AC coaches, engine radiators and traction motors. Testo introduced the temperature and humidity data logger testo 176 T4 which is very versatile in use to check and measure the temperature & humidity and take corrective actions in air conditioning systems of the coaches. Vane anemometers testo 410-2 is the ideal product offered to measure air velocity and can be used for trouble shooting & checks during pre-post installations of new or refurbished equipment.



Testo has also revolutionised measurement technology in the Indian railway with products like testo 440, intuitive air velocity & IEQ measuring instrument which can carry out measuring tasks on air conditioning and ventilation systems reliably under control with just one versatile instrument and multiple range of wired & Bluetooth probes. In addition, Testo also offers Electrical Instruments namely, testo 760-3 & testo 770-3 for all electrical parameter measurements in coach panels & all facility management areas.

Supplements

All these instruments are very relevant for Metro Rail Corporation for metro car sheds & coaching departments. They even find application in the advanced trains like Tejas Express & Train 18.

Refrigerant evacuation & Leak detection

Evacuating is one of the most important steps when it comes to installing or restarting refrigerant or air conditioning systems where foreign gases, moisture and oils must be removed properly. That's when the absolute pressure of a system needs to be measured. Testo introduced Digital vacuum gauge testo 552 which is designed to provide highly accurate information regarding de-humidification status of the system and can measure even the smallest of absolute pressures reliably.

Testo has also introduced Refrigerant Leak Detector testo 316-4 in Indian Railway coaching department to find out leakages in coach air-conditioning systems & avoid potential hazards. Also, due to refrigerant leaks entire cooling system dysfunctions. Carrying out leak detection activity not only ensures a healthy air conditioning equipment, but also promotes energy efficiency.

Engine Emission Analysis

A lot of rail engines in India run on diesel as a fuel used for combustion, which in return lead to emission of exhaust gases. Exhaust gas measurement is necessary to adjust the engine to optimum operating parameters while complying with the limit value regulations. Also, the environmental concerns pertaining to pollution and its effects need to be handled well. As an appropriate solution testo India introduced the flue (exhaust) gas analyzer testo 350 in Indian Railway Diesel loco shed for measurement of the emissions in diesel engines and helps to verify the efficiency of the engines. It is an important tool for adjusting a gas or diesel engine to optimum effect. testo 350 is used, for example, during commissioning, at regular maintenance intervals, or for necessary troubleshooting of unstable operational processes.



More Information

For more information, please write to us on info@testo.in or visit www.testo.com.

Testo India Pvt. Ltd.

Plot No. 23, Sind Society, Baner Road,
Aundh, Pune - 411007.

Tel: +91 20 2592 0000 | Fax: +91 20 2585 0080.

Email: info@testo.in

www.testo.com