

LINEAR THERMAL DETECTOR

Linear Thermal detector is being used to detect the over heat and fire condition in engine compartment of Armoured Fighting Vehicles (AFVs) and aerospace application. Till date it is being imported and contributes the major cost in fire detection and suppression system.

CFEES has developed Linear thermal detector to detect overheat and fire condition in Engine compartment of Armoured Fighting Vehicles (AFVs). Linear thermal detector is a coaxial cable in which negative temperature coefficient material is filled between outer sheath and central conductor. It provides overheat warning and actuates fire extinguisher in case of fire in engine compartment of AFVs

Materials for outer sheath, central conductor and material to be filled between outer and central conductor has been identified and fabrication process of linear thermal detector has been devised. Fabrication process includes filling of NTC material between hollow tube and centre conductor, drawing & annealing.

Design and development of linear thermal detector having $\leq 2.5\text{mm}$ outer diameter and 20feet length has been carried out. Testing and evaluation of prototype has been done successfully. Linear thermal detector qualified environmental tests as per JSS55555. Resistance between outer sheath and inner conductor decreases with increase in temperature. Cost of indigenously developed linear thermal detector will be lesser as compared to imported one. Linear thermal detector can be used for aviation application also to detect the fire in engine. It can also be used to detect the fire in civil vehicles as well as in process plants coupled with fire fighting system.



Fig. Linear Thermal Detector