

46ESS-28: Pressure sensors and pressure measurement

PABLO ANTÓN

In order to monitor the overall performance and behaviour of a gas turbine, pressure measurement plays a role of paramount importance. Pressure sensors are used in both aero and industrial applications in the test and on-condition monitoring phases to measure the pressures in the main flow path, and also with the aim of ensuring that the pressures in the auxiliary systems do not exceed the limiting values. From the early measuring instruments based on Pitot tube variations, pressure sensors have experienced a significant evolution until the modern gauge strain and solid-state devices that can be found in a modern gas turbine nowadays. In this work, an overview of the pressure measurement problem is presented, showing the different technologies and strategies that have been used in the gas turbine field. In addition, the last developments and future trends are presented, paying special attention to the instruments used to measure dynamic pressures in the hot sections of the engine.