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Jet Engines Trainers

DESCRIPTION

Turbojet Engine Lab
Designed to provide a rare jet engine training experience & electric turbine generator system offers hands-on energy conversion lab, offers students an exciting opportunity- operation of a real jet engine.

System displays and records compressor inlet temperature and pressure, turbine inlet temperature and pressure, turbine exit temperature and pressure, thrust and fuel flow and makes possible studies of :

- ✓ Brayton Cycle
- ✓ Compressor Performance
- ✓ Turbine Performance – work & power, expansion ratio, turbine efficiency
- ✓ Combustion/Emissions Analysis

GAS TURBINE LAB

The systems National Instruments based data acquisition hardware and software displays and records compressor inlet temperature and pressure, turbine inlet temperature and pressure, turbine exit temperature and pressure, thrust and fuel flow and makes possible studies of :

- ✓ Brayton Cycle
- ✓ Compressor Performance
- ✓ Turbine Performance – work & power, expansion ratio, turbine efficiency
- ✓ Combustion/Emissions Analysis

ON-BOARD JET ENGINE DATA ACQUISITION

The pre-installed Interactive Virtual Instrument (VI) Panel displays and records pertinent engine data for follow-on study. This will generated VI offers a real-time graphical perspective of engine performance. All engine operating parameters are displayed clearly on the engine cutaway graphic.

Engine pressures, temperatures and fuel flow are displayed in digital data windows. Engine and thrust are displayed on analog-style round meters for a neat visual cue (the readings are also displayed digitally below each meter).

The real-time plotting feature lets the operator plot any parameter on screen as it occurs to provide a clear sense of how the data is reacting to the actual system operating conditions. Operators can toggle between all the parameters to watch them graphically. Data logging functionality is conveniently controlled from the VI screen. All the jet engine power data can be observed and tracked through its full throttle range. Feeding this interactive VI is data from the on-board National Instruments Data Acquisition System. That same data is also stored for later retrieval and analysis and the VI code is even open for user programming and customization.

GAS TURBINE ELECTRICAL GENERATION SYSTEM

The primary component of it is a self-contained turbo shaft engine. The engines mechanically-free power turbine drives an electric generator. The system is expressly designed for energy conversion research and education.

The Interactive Virtual Instrument (VI) Panel is a high-powered extension of the system's main operator control panel. This will generated VI offers a real-time graphical cutaway perspective of the system operation, which allows operators to "look inside". All system operating parameters are displayed as they occur with system locations clearly indicated on the cutaway graphic.