
Flight Simulator Control

The Trans-Tek Model 0605 Angular Displacement Transducer (ADT) is an absolute, infinite-resolution rotary sensor based on a differential capacitive technology. Full supporting electronics allow for DC-in/DC-out operation while delivering a precise, stable output proportional to shaft angular displacement in working ranges to 300 degrees.

The Model 0605 ADT was designed to provide a simple means of inputting angular position into analog systems. Internal voltage regulation along with a factory set full scale output allows direct interchanging of units without the need for recalibration. Users can choose from several options including: displacement ranges, output signal, operating temperature range, splashproofing and method of termination. These choices are described in the model's "S" number.

One OEM customer making good use of our ADT technology is Servos and Simulations, Inc. of Altamonte Springs, Florida. Servos and Simulation was originally formed to provide engineering services to large aerospace firms under military contract. Years later, this innovative company developed a full line of flight simulator control loading systems used to simulate flight controls for aircraft such as the 727, 747, F-14 and numerous others. An all-electric control loader actuation technology was later introduced to target a variety of motion bases for the simulation industry.

Due mostly to its simplicity and low cost, this new design was also marketable to additional areas such as the entertainment ride industry.



In the design of their control loaders, Servos and Simulation utilizes a previous iteration of the Model 0605 ADT to provide angular feedback for as many as eight axes of motion. In addition to the ADT which measures position, these actuators use a load cell to measure the force on the flight controls, and an electric motor to provide the required force. The control loader simulates all the springs, linkages, aerodynamic forces and control surfaces in software running on a Pentium 100. The software can simulate the flight controls on any aircraft.

Servos and Simulation discovered that the Trans-Tek ADT offered accurate and reliable position feedback for their simulators, helping them to lead their industry with a superior product line. Many other customers covering a wide variety of applications have found our ADT to be an excellent alternative to other devices by combining the accuracy of costly optical encoders, the infinite resolution of RVDT's and the economics of an angular potentiometer while avoiding the limitations of these other technologies. Wherever a single-plane, rotary motion can be coupled to the shaft of the Trans-Tek ADT, a precision angular feedback can be assured for nearly any application.

