

ThrustSense[®]

Autothrottle with LifeGuard[™] Protection



Full Regime King Air Autothrottle



Innovative
Solutions & Support

ThrustSense Autothrottle with LifeGuard™ Protection for the King Air:

Overview

The IS&S ThrustSense Autothrottle is the first ever full regime autothrottle system to be certified for the King Air. ThrustSense allows the pilot to automatically control the power setting of the engines from takeoff to landing phases of flight, including go-around. The autothrottle computes and controls appropriate power levels reducing pilot workload.

IS&S's patented LifeGuard™ provides critical VMCa protection, as well as FADEC engine protection, eliminating two of the greatest 'low-and-slow' challenges associated with twin engine operations. The King Air ThrustSense Autothrottle enables automatic control of engine power settings by computing and adjusting to the maximum safe power levels, with precision not practicably achievable by the flight crew.

The system's influence on safety is not limited to just VMCa protection, however, as ThrustSense Lifeguard™ manages engine power throughout all phases of flight, eliminating over speed/torque situations, further reducing pilot workload.

IS&S's Standby Display Unit enables full autothrottle control interface as well as full standby capability.

There are no additional structural modifications needed (other than replacing the existing standby with IS&S's), thus aircraft downtime is minimized.

VMCa Protection Down to Stall Warning Utilizing Maximum Safe Power on Operating Engine



ThrustSense Offers Reduced Pilot Workload with the Ultimate Engine and Airframe Protection for King Air Owners & Operators



Features:

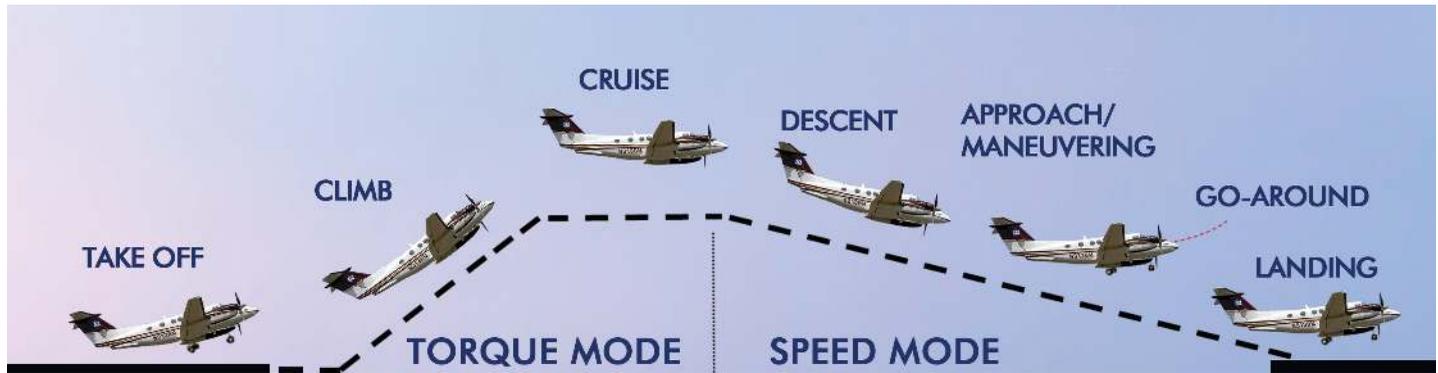
- ◆ FADEC Engine Protection
- ◆ VMCa Protection
- ◆ Standby Capability
- ◆ Over-Torque Protection
- ◆ Over-Temperature Protection
- ◆ Under & Over Air Speed Protection

Benefits:

- ◆ Reduced Pilot Workload
- ◆ Increased Situational Awareness
- ◆ Stabilized Approaches
- ◆ Symmetrical Engine Power Management
- ◆ Precise Capture of Speed Target
- ◆ Minimal Additional Force Required to Over-ride Power Lever
- ◆ Installation - minimum modifications to existing flight deck



ThrustSense Operation



TAKEOFF MODE: ThrustSense® is engaged for Takeoff. The System compensates for any engine surge. Take-off mode is active until the System transitions into climb mode.

GO-AROUND MODE: The System automatically sets maximum safe power while maintaining full engine protection.

CLIMB MODE: The throttles are automatically reduced to a maximum continuous climb or torque schedule as a function of altitude.

AIRSPEED MODE controls airspeed to a commanded value through a manually selected speed change. The Autothrottle maintains a constant mach speed, as commanded by FMS or pilot's control panel.

PROTECTION MODES are constantly monitoring the aircraft performance and engine performance. The engines are kept within safe torque and temperature limits, per the POH.

LOSS OF OPERATING ENGINE (VMCA MITIGATION): ThrustSense Autothrottle will apply appropriate maximum safe power that precludes adverse yaw and catastrophic upset. The Autothrottle's One Engine Inoperative (OEI) mode is active during engine loss when ThrustSense is engaged for take-off, climb or go-around.

ThrustSense Autothrottle with LifeGuard™ Protection: Standby Options



Certified and Available for King Air Pro Line 21 and Pro Line Fusion Flight Decks the ThrustSense® Autothrottle is commanded by the Standby Display Unit that serves as the pilot's interface mode for speed and torque selections, and also serves as a standby EFIS system. The Standby Display Unit houses the computer, which controls the Actuator Assembly which physically moves the throttle.



IS&S is the world's leading supplier of RVSM systems and integrator of Cockpit Information Systems (Cockpit/IP®) for the Commercial Air Transport, Military, and Business Aviation Markets. IS&S incorporates leading edge technologies into sophisticated, cost-effective solutions for the aerospace industry.

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ThrustSense®

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